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Skeptical Inquirer

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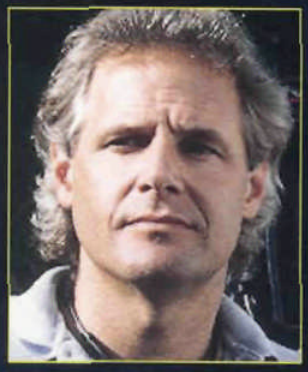
The X-Files
Encounters the Skeptics
Chris Carter Takes Questions



Chris Carter, Creator of *The X-Files*

The Significance of the Millennium
Lee Loevinger

Quantum Quackery
Victor J. Stenger

The Mysterious Placebo
John E. Dodes

Bias and Error in Children's Books
Richard Wiseman & Clive Jeffreys

Published by the Committee for the Scientific Investigation of Claims of the Paranormal

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January/February 1997 • VOL. 21, NO. 1

ON THE COVER:
Agents Dana Scully (Gillian Anderson) and Fox Mulder (David Duchovny) of *The X-Files*.

SPECIAL FEATURE

24 *The X-Files* Meets the Skeptics

Chris Carter, creator and executive producer of The X-Files, *was the invited luncheon banquet speaker for the first day of the World Skeptics Congress and CSICOP Twentieth Anniversary Conference in Amherst, New York. We present here essentially the transcript, only slightly edited for brevity, of that fascinating event, which consisted of informal introductory remarks by Carter followed by an extensive question-and-answer session.*

ARTICLES

31 The Significance of the Millennium

The millennium has no natural terrestrial, sidereal, or cosmic basis or importance. But the last years of the twentieth century are the first in human history in which there has been a worldwide recognition that a millennium measured by a universally accepted calendar is about to end and a new one begin.
LEE LOEVINGER

37 Quantum Quackery

Quantum physics is claimed to support the mystical notion that the mind creates reality. However, an objective reality, with no special role for consciousness, human or cosmic, is consistent with all observations.
VICTOR J. STENGER

41 Bias and Error in Children's Nonfiction Books on the Paranormal

An analysis of five children's books claiming to be factual and nonfiction found that 85.2 percent of the passages either explicitly confirmed certain events as paranormal, failed to present alternative explanations, or dismissed such explanations as implausible.
RICHARD WISEMAN and CLIVE JEFFREYS

44 The Mysterious Placebo

One of the most significant but widely misunderstood phenomena is the placebo effect. Research shows that the placebo effect can be greater and is far more ubiquitous than commonly thought.
JOHN E. DODES

The Significance of the Millennium p. 31

Quantum Quackery, p. 37

COLUMNS

EDITOR'S NOTE 4

NEWS AND COMMENT
Pope's Affirmation of Evolution Welcomed by Scientists, Educators / Creation Science Banned from Lakewood, Ohio, Classrooms / What? I Don't Remember That! Tabloid Predictions Miss Again / Image of Guadalupe: Myth-perception / Bill Nye the Science Guy Takes on Pseudoscience / Science Gets Burned on TV Once Again: UPN's New Show, *The Burning Zone* 5

NOTES OF A FRINGE-WATCHER
Jean Houston: Guru of Human Potential
MARTIN GARDNER 14

INVESTIGATIVE FILES
Sleuthing a Psychic Sleuth
JOE NICKELL 18

MEDIA WATCH
How Do TV's Pseudoscience Specials Rate? And the Case of the Quadro Tracker
C. EUGENE EMERY, JR. 20

PSYCHIC VIBRATIONS
Implants and Gurus Are Everywhere
ROBERT SHEAFFER 22

NEW BOOKS 54

ARTICLES OF NOTE 55

FORUM
Reason Unbalanced
DAVID A. SHOTWELL 56

Swift, Boone, and Bigfoot: New Evidence for a Literary Connection
DAVID MATTHEW ZUEFLE 57

LETTERS TO THE EDITOR 61

GUIDE FOR AUTHORS 65

BOOK REVIEWS

Red Earth, White Lies: Native Americans and the Myth of Scientific Fact
by Vine Deloria Jr.
JOHN C. WHITTAKER 47

Open Skies, Closed Minds: For the First Time a Government UFO Expert Speaks Out
by Nick Pope
CHRISTOPHER C. FRENCH 50

Victims of Memory: Sex Abuse Accusations and Shattered Lives
by Mark Pendergrast
PETER HUSTON 53

EDITOR'S NOTE

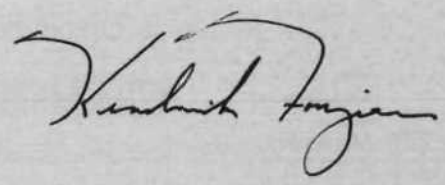
The X-Files, the Millennium, and Quantum Quackery

The X-Files puts many of us concerned about science and reason in an uneasy position. Smart, sophisticated, moody, dramatic, it is great popular entertainment. Filled with paranoia, conspiracies, portentousness, and a fictional world in which the paranormal exists and aliens might, it often distorts reality in the service of a good story. Should anyone care? Do television dramas shape people's perceptions of reality? Does fictional entertainment have any responsibility to truth? Despite agent Dana Scully's resolute science-based skepticism in counterpoint to agent Mulder's need to believe, does skepticism still get short shrift? If so, can something be done about that? Should it be? Or should we just relax? Is it all just good fun?

All these questions arose when *The X-Files*' creator and executive producer Chris Carter accepted an invitation to speak and take questions at the first World Skeptics Congress—CSICOP's Twentieth Anniversary Conference. The result begins on page 24.

We will soon greet a new millennium. Lee Loevinger examines some of the questions about it in this issue. The turning of a millennium has no cosmic or astronomical or physical significance at all. In that sense the impending observance is arbitrary. But human culture is another thing. He points out that this is the first turning of a millennium in which there is near planetwide agreement on a calendar and in that sense it is a first-of-its-kind event due some special treatment. He also has some surprising things to say about the debate over whether the Third Millennium begins on January 1, 2000—or 2001.

Quantum mechanics, the centerpiece of modern physics, has some weird, counter-intuitive aspects, no doubt about it. But that hardly means it is mystical. An entire publishing industry of quantum mysticism has sprung up to capitalize on and spread the misleading ideas that the human mind controls reality, objective reality has no meaning, and quantum weirdness allows for extrasensory communication. Physicist Victor Stenger, author of *The Unconscious Quantum*, calls all that "quantum quackery," and his article on the subject in this issue explains why.



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Pope's Affirmation of Evolution Welcomed by Scientists, Educators

"For creationists," said radio commentator Paul Harvey, "it's like an atom bomb going off."

For scientists and teachers involved in the fight to keep evolution in science classrooms, it was, well, almost a godsend.

Pope John Paul II's formal statement October 24 affirming that evolution does not conflict with teachings of the Roman Catholic Church was widely welcomed by scientists and educators. Creationists, in contrast, tried their best to minimize its effect.

"New knowledge leads us to recognize the theory of evolution [as] more than a hypothesis," said the pope in a message to the Pontifical Academy of Sciences meeting at the Vatican in plenary session on the theme of the origin of life and evolution.

The statement was seen as a powerful influence on religiously minded people toward the view that evolution is an accepted part of science and poses no serious challenge to mainstream religion. Scientists consider evolution through natural selection a fundamental unifying principle of biology, strongly supported by a host of interlocking evidence at all levels, from molecular and cellular biology, to physiology, ecology, and population biology, and from other scientific fields such as geology, geophysics, geochemistry, astronomy, paleontology, and anthropology.

Coming at a time when creationists have stepped up their campaigns to demand that school districts consider evolution "just another theory" that should not be taught as accepted science, the pope's statement was a much-needed reassurance from a prominent world religious leader that science and religion need not be in conflict on this point.

Newspapers worldwide gave the story front-page treatment.

"Pope Bolsters Church's Support for Scientific View of Evolution," was the *New York Times* top-of-the-front-page headline. "Pope Backs Acceptance of Evolution," said the *Washington Post.* "Pope Embraces Evolution," said the *International Herald Tribune.* "Pope Yields to Theories on Evolution," said the *Telegraph* (London). "Pope Accepts Evolution, Creates Furor," said *USA Today.* "Pope Bolsters Church Support for Evolution," said the *Chicago Tribune.* "Pope Calls Evolution Theory Compatible with Faith," said the *St. Louis Post-Dispatch.* "Pope Accepts Evolution," the Reuters news service headed its international wire report, over this lead: "Pope John Paul II has lent his support to the theory of evolution, proclaiming it compatible with Christian faith in a step welcomed by scientists but likely to raise howls from the religious right."

"I am delighted that it has received so much publicity," said Eugenie Scott, Director of the pro-evolution National Center for Science Education (NCSE), of the pope's message. "This is not a new story," she emphasized, however. "John Paul II is the fourth pope to affirm that evolution is no problem for Catholics."

Scott's comments came at a meeting of the Executive Council of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), in Alexandria, Virginia, where she and others, perhaps only half in jest, suggested that John Paul II should be the next recipient of CSICOP's "In Praise of Reason Award."

Pope Pius XII's 1950 encyclical "Humani Generis" and the conciliar Constitution "Gaudium et Spes" dealt at the papal level with the question of the origin of life and evolution.

"'Humani Generis,'" John Paul II said in his statement, "considered the doctrine of 'evolutionism' as a serious hypothesis, worthy of a more deeply studied investigation and reflection on a par with the opposite hypothesis. . . . Today more than [*sic*] a half century after this encyclical, new knowledge leads us to recognize in the theory of evolution more than a hypothesis. . . . The convergence, neither sought nor induced, of results of work done independently one from the other, constitutes in itself a significant argument in favor of this theory."

The pope said he was delighted that the plenary's theme was the origin of life and evolution, "a basic theme which greatly interests the church." In 1936 the Vatican's Academy of Sciences was restored by Pope Pius XI, who called the group of scientists and scholars "the Church's 'scientific senate'" and asked them "to serve the truth."

"If the scientifically reached conclusion and those contained in Revelation on the origin of life seem to counter each other," said John Paul II in his statement, "in what direction should we seek their solution? We know in effect that truth cannot contradict truth.

"In the domain of inanimate and animate nature, the evolution of science and its applications make new questions arise. The Church can grasp their scope all the better as she knows their basic aspects."

The Catholic Church has, in practice, had little conflict with evolution in recent decades. Most parochial schools teach evolution in science classes, something that cannot be said of all U.S. public schools. Likewise, the Episcopal Church, the Lutheran World Federation, the

United Methodist Church, the United Presbyterian Church, the Universalist Association, and the American Jewish Congress are among the religious organizations that have issued statements on behalf of the teaching of evolution and opposing the introduction of creationism in the science classroom. (A compilation of these statements and those by education, civil liberties, and scientific organizations, along with the texts of relevant court decisions on creationism/evolution, is published in NCSE's 1995 book *Voices for Evolution.* NCSE, P.O. Box 9477, Berkeley, CA 94709.)

"The Bible can't be comprehended as a textbook on how the world and human life began," said Martin E. Marty, who teaches the history of modern Christianity at the University of Chicago. "I think you have to look at the world in more than one way. The important thing for all theists is that humans are related to nature. That's why I think this [statement] has a lot more weight to it. You can keep the distinctiveness of the human as the image of God and still see the human as part of this billions-year-long process."

Evangelical Protestant Christians and other fundamentalists, on the other hand, have long resisted the teaching of evolution. Many insist on a literalist interpretation of the Bible, treating it as an inerrant historical and scientific text. This past year creationists have stepped up their campaigns, using a variety of new tactics to get creationist, anti-evolution candidates into state and local political offices and onto school boards. Some of these tactics have been labeled "stealth creationism," and they are posing increasingly difficult problems for scientists and educators concerned that evolution be taught in science classes ("Creationists Evolve New Strategy," *Science,* 273: 420–422, July 26, 1996, and "Evolution Loses Out in New Mexico," *SI,* November/December 1996).

"Obviously, the pope has a lot of followers, and if he said the moon was made of green cheese, a lot of people would believe him on that too, but it doesn't mean it's true," said Bill Hoesch, a spokesman for the Institute for Creation Research, which promotes creationism.

"If people are bound and determined to either discredit evolution or try to get creationism taught, it's not likely they will be deterred by what the pope says," said Deanna Duby, director of education policy for People for the American Way. "It might make it a little harder for them to get a sympathetic ear, but the issue won't go away."

Throughout his papacy, John Paul II has sought to bring the church into accord with science. In 1992, in a similar statement to the Vatican Academy of Sciences, he declared that the church had erred in condemning Galileo as a heretic in 1633 for contending that Earth was not the center of the universe in contradiction of church teachings at that time. The 1992 statement seemed intended to rectify one of the church's most embarrassing wrongs toward science.

—Kendrick Frazier, Editor

Creation Science Banned from Lakewood, Ohio, Classrooms

This spring, the school district of Lakewood, Ohio, a large, prosperous, well-educated suburb of Cleveland, found itself forced to issue a letter to all district teachers forbidding the teaching of "creation science" in its classrooms.

Faced with a threatened lawsuit from the American Civil Liberties Union and significant public pressure and media attention, the district administration took action to prevent both of its full-time high school physics teachers from teaching "creation science"—a religious doctrine the U.S. Supreme Court has ruled may not be taught as science. A statement to the press said the teaching of creationism in the high school class was "wrong and regrettable." But interestingly, few complaints, if any, came from parents or students in the class primarily responsible for the tempest.

For five years, Lakewood High School physics teacher Mark Wisniewski had been teaching an administration-approved curriculum that included a section in which students were assigned two papers exploring the genesis and impact of their own "worldviews" and how these views shape their interpretations of the debate between creation science and the scientific views of the origin of life and the universe. Wisniewski, who acknowledges that he is a creationist, claims, "I tailored the entire thing to the philosophy of Lakewood High School. I thought I was following that philosophy." The district's other high school physics teacher also expounded his own creationist philosophy in an informal way in his classes but did not formally include references in his curriculum.

Jennifer Whearty, who took Wisniewski's class as a senior last year, wrote an editorial in the Lakewood High School paper praising Wisniewski's teaching, and it was this that attracted the attention of the Cleveland media. Her editorial praised his "innovative way of teaching." She says she is upset that her support of Wisniewski's class started the chain of events that banned his teaching. Claiming the news reports and community reaction were blown out of proportion, she said, "He never stood on a soap box and never made us feel like we were in Bible study . . . . The philosophical element is what made it special. [Wisniewski] wanted us to make up our own minds more than spoonfeed us like other educators."

Wisniewski argues that the first of the two assignments under fire was to get students to examine "'What do I believe, where did I get the belief from,' and they had to try to find some kind of support for their ideas. There were no right or wrong ideas."

The second of the two papers in question, Wisniewski said, was to give students a handle on how one's "world-

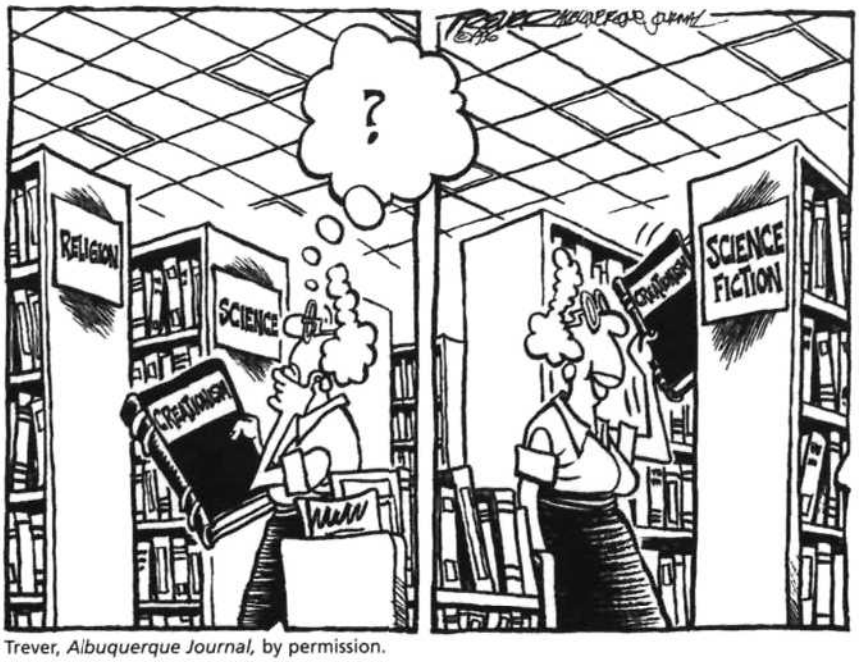
view" affects interpretation of evidence. "I tried to find something in the science arena, and the creation-evolution debate fits like a glove," Wisniewski said. Asked if any other issue might illustrate his point as well without bringing religious debates into the classroom, Wisniewski argued that it is important that the dispute goes to core beliefs or the example wouldn't really hit home. He said his goal was to teach students how to interpret data on their own and not just "memorize and regurgitate the favorite interpretation of the teacher."

Wisniewski said he graded on how well the ideas were supported, not the answer the student ultimately gave. He said he gave some evolutionists A's and some creationists low grades.

Wisniewski says he is a bit mystified by public reaction and press reports after the story broke, arguing this section of the curriculum is only about 4 percent of his course. "The articles make it sound like a continuous, day-to-day thing," he said. Arguing that the class was designed for college-bound juniors and seniors, Wisniewski said, "You mean to tell me I'm going to warp their tender little minds?"

By all accounts, Wisniewski is considered by both students and school staff as a popular and excellent teacher. Lakewood Schools Superintendent Joseph Madak confirmed Wisniewski's claim that only one complaint about the course reached the administration five years ago, the first year the unit was added to the course. That complaint was discussed with a vice principal at the high school who convinced the parent to wait awhile to see how the class proceeded. That parent never came back, according to Madak's investigation. (Madak became superintendent only last year.) Madak also confirmed that several school board members had children in Wisniewski's class but said that he, himself, was not aware of this unit of study until the *Plain Dealer*, Cleveland's primary newspaper, broke the story.

Suddenly calls began flooding the administration, Madak said, both supporting and complaining about Wisniewski's creationist teachings. Madak said that of these calls, most were from people living outside the community, some threatening to call the ACLU, others naming groups who would help the district defend teaching creationism.



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Madak said, however, the primary reasoning behind his ban of this unit and any teaching of creation science was legal. He said that after the story broke, he brought in outside counsel to help with his investigation and evaluation of what was being taught and how it fit with Supreme Court rulings on the subject.

"Our legal people put all that together and determined it was inappropriate as taught in our high school," Madak said. "The decision was based on our responsibility to follow the law."

Madak claims that the threatened ACLU lawsuit played only a small role in his decision but convinced him that anything done by the administration had to be done in strict accordance with law. He noted that he is not an expert on what legally constitutes teaching religion in school and said until he heard the lawyer's recommendation, he really didn't know whether the controversial aspects of Wisniewski's curriculum might be legal.

"Those of us who would like to see youngsters study creationism" should assure that it is taught in churches and synagogues and "not put the schools in the middle," Madak said. Asked if he included himself in that "us," whether or not he was a creationist, Madak declined to answer.

Raymond Vasvari, an ACLU lawyer who has worked on other creation science cases, believes that despite what Madak said, Vasvari's threat of a lawsuit is what pushed the administration to take action. He said the administration and school board knew creationism was being taught at the high school and that the district was dragging its feet even after the issue became public. "The board had a silent policy supporting these teachings," he said. "At what point does inaction become silent approval?"

Vasvari said he threatened to sue to make sure the board did not equivocate but made a policy statement to all staff that Wisniewski's curriculum was "not just questionable and an exercise in poor judgement but a violation of the first amendment."

Arguing that any discussion of creation science in the classroom was state-sponsored religion, Vasvari said, "As a teacher, he is not just another man pass-

ing on his ideas, he is an agent of the state.

"Rightly or wrongly, we have made a decision as a society to separate government and religion from each other and to insulate them from each other for their mutual benefit."

—*William Cohen-Kiraly*

The author is a freelance writer in Cleveland.

What? I Don't Remember That! Tabloid Predictions Miss Again

Nineteen ninety-six was an interesting year. Rush Limbaugh became the Republican nominee for President; Roseanne killed off her popular TV character; cures for baldness, arthritis, and AIDS were announced; and Michael Jackson had a sex-change operation.

If you don't remember those headlines, you're not alone. They didn't happen. But those are some of the some of the events that were *supposed* to occur in 1996 according to the top psychics who reported their predictions a year ago in the supermarket tabloids such as the *National Enquirer,* the *Sun,* and the ever-wacky *Weekly World News.*

As in previous years, their batting record for forecasting major unexpected news events for the coming year was abysmal.

Here's a tabloid-by-tabloid rundown of the year that should have been, according to some of the world's best "psychics."

The *National Enquirer:*

• Jay Leno will lose his *Tonight Show* job to Johnny Carson.

• O. J. Simpson will become a minister after confessing during testimony in a civil suit that he killed Nicole Brown Simpson and Ronald Goldman.

• *Good Morning America* hostess Joan Lunden will become engaged to Shaquille O'Neal.

• O. J. attorney Johnnie Cochran will be hailed as "the new Bill Cosby" when he plays a defense attorney in a TV comedy that becomes "a smash" hit.

• Barbara Walters will be kidnapped by Middle East terrorists, "but will be freed after ABC agrees to let the terrorists air their views on a three-hour broadcast hosted by Barbara."

The *Globe:*

• O. J. prosecutors Marcia Clark and Chris Darden will marry; meanwhile Simpson will join a monastery.

• Susan Lucci finally wins an Emmy but breaks a toe when she drops it on her foot.

• Angela Lansbury will devise "a dramatic departure from *Murder, She Wrote* by casting herself as the show's final victim."

The *National Examiner:*

• Michael Jackson will undergo a "complete sex change and insist that everyone call him Michelle. . . . His wife, Lisa Marie, will stick by him—and they'll develop an even closer relationship."

• Rush Limbaugh will quit his career as a conservative political spokesman to star "in a remake of the series 'Jake and the Fat Man.'"

• Comic actor Jim Carrey will get an Oscar after his face freezes in a twisted expression.

• Nuclear missiles will be used to break up a giant asteroid found to be hurtling toward Earth.

The *Sun:*

• An American astronaut "will give birth to a healthy baby girl during a six-month mission aboard the Russian space station Mir."

• Rush Limbaugh will be the Republican nominee against Bill Clinton, picking Sonny Bono as his running mate.

• The South Pacific island nation of Tonga will land—and then strand—people on the moon. The U.S. will rescue them.

• The American and National leagues will be disbanded after another baseball strike and NFL owners will sell their teams to the players.

On the medical front, 1996 was supposed to be the year that *Star Trek* star Patrick Stewart discovered an herbal cure for baldness, actor James Garner discovered a cure for arthritis that people could make in their own kitchens, and a miracle cure for AIDS was found.

The prize for the most embarrassing prediction goes to Mystic Meg, a psychic for the *Globe.* In the January 2, 1996, issue she said, "Jerry Lewis and Dean Martin reunite for an emotional reunion on TV." Martin died in December of 1995, around the time the prediction hit the newsstands.

The psychics' horrible batting average isn't surprising. They've gotten very few hits since I began saving their predictions around 1980. What continues to be surprising is that the tabloids keep carrying the predictions of the same psychics year after year. Any professional ball player who missed as often as these folks would have been sent to the showers.

A year ago, in response to a similar analysis, *National Enquirer* executive editor Steve Coz told a reporter from the *Dallas Morning News* that the list of predictions "isn't something to be critiqued" because "it's a fun read, and it's meant to be taken as that."

Okay. But in the same interview, Coz said the predictions are published to tell readers, "Here's what you can look forward to."

In short, the *Enquirer* tries to have it both ways by trying to build up the credibility of their psychics when they publish the predictions, yet billing the predictions as entertainment when the editors are forced to confront the fact that they keep quoting psychics whose predictions, year after year, have failed.

So what's in store for 1997?

According to the tabloid psychics, it will be the year plastic surgeons discover a way to give dogs the faces of movie stars, Tammy Faye (wife of disgraced tele-evangelist Jim Bakker) is appointed ambassador to Israel, Americans get a $1,000 tax deduction for every career criminal they kill, scientists discover

how to communicate with the dead, time travel becomes as affordable as a Disney World vacation, and Madonna makes a successful run for U.S. Senate.

—C. Eugene Emery Jr.

Gene Emery writes the SKEPTICAL INQUIRER's *"Media Watch" column.*

Image of Guadalupe: Myth-perception

A radio announcer asked his listeners to brace themselves for a report that would "shock all of Mexico." When it came, it did not announce an assassination as some assumed. For many, it was even worse. It concerned the most popular shrine in the Roman Catholic world next to the Vatican. As the San Antonio *Express-News* reported in its five-column headline: "Faithful Aghast as Abbot Paints Virgin Story as Myth."

The reference is to the tale that in 1531 (some ten years after Cortez's defeat of the Aztec Empire) the Virgin Mary appeared to an Indian peasant named Juan Diego and gave him a "sign": her full-length image miraculously imprinted on the inside of his cloak. The reputed miracle was instrumental in effecting the mass conversion of the Aztecs to Catholicism.

And now Monsignor Guillermo Schulemburg, abbot of the Basilica of Guadalupe where the Image is enshrined, was claiming the whole story was a myth. The Italian magazine *30 Giorni* ("30 Days") quoted Schulemburg as saying that Juan Diego was fictitious, "a symbol, not a reality." He also stated, according to the magazine, that Juan Diego's 1990 beatification by Pope John Paul II (a step preparatory to sainthood) was simply "a recognition of a cult. It is not a recognition of the physical, real existence of the person."

Skeptics have long known that the Guadalupan story was quite similar to an earlier Spanish legend and that the portrait of the Virgin was typical of Spanish

The Image of Our Lady of Guadalupe.

art of the period. And while obvious evidence of paint throughout the image areas has prompted miraculists to claim the paint was added later, infrared photographs indicate otherwise, revealing apparent preliminary sketch lines and other evidence that the picture was produced in the usual manner for a painting. Moreover, during a formal investigation of the cloth in 1556, one priest testified that the Image had been "painted yesteryear by an Indian," and another that it was "a painting that the Indian painter Marcos had done." (An Aztec painter, Marcos Cipac, was active in Mexico at the time the Image of Guadalupe appeared. For more on the Image, see SKEPTICAL INQUIRER 8[4], Spring 1985, pp. 243-55.)

As the faithful reacted bitterly to Schulemburg's reported statements, the office of the beleaguered, 80-year-old abbot issued a statement saying the comments attributed to him were "absolutely false." However, the SKEPTICAL INQUIRER's Mexico City correspondent, Patricia Lopez Zaragoza, provided this informed assessment: "Schulemburg has repeatedly said that the apparitions are a myth. He has pointed this out since some years ago. After this scandal Schulemburg insisted a couple of times on his version of the story. However after political pressure grew against him he somewhat retreated to a safer position claiming the value of the apparitions as a mere symbol of Mexican Catholicism. It must be said," she added, "that he hasn't really retracted his previous antiapparitionist position."

In early September 1996, the Roman Catholic Church announced Abbot Schulemburg's resignation as head of the basilica. According to the Associated Press dispatch, the church "gave no reason for his departure."

—Joe Nickell

Bill Nye the Science Guy Takes on Pseudoscience

If you haven't seen the syndicated and Public Broadcasting Service television series *Bill Nye the Science Guy,* you should check it out. Targeted at young people, it makes science fun, lively, fascinating, and, well, *cool.* Host Bill Nye clearly loves science, and his irrepressible enthusiasm for everything about it is infectious. The half-hour program is fast-paced, provocative, visually appealing, and funny. It's that rare commodity in science programming: entertaining *and* informative. The National Science Foundation provides funding.

One of the first new episodes this fall broached a new subject: *Pseudoscience.* Nye (who has spoken and performed at two past CSICOP conferences) wrote the show. He clearly did his homework.

There may not ever have been a more effective half-hour television show demonstrating the differences between real science and pseudoscience.

Extraordinary claims demand extraordinary proof is one of the program's persistent themes. Nye repeats it like a drumbeat. Others: Science is a process that thinks up ways to test claims—it's a way of avoiding fooling ourselves. A claim that's presented in a way that can-

Fund for the Future

CSICOP AT THE CENTER FOR INQUIRY

An Unprecedented $20 Million Drive for the

Human beings have never understood the material universe as thoroughly as they do today. Yet never has popular hunger for superstition, pseudoscience, and the paranormal been so acute.

CSICOP and the *Skeptical Inquirer* are leading advocates for skepticism nationally and worldwide. But so much more must be done in the years to come.

Day and night, the Center for Inquiry has become a focus of academic and popular inquiry.

Publishing revenues alone cannot fund the bold outreach today's challenges demand. Hence the Fund for the Future Campaign, a ten-year effort to add 20 million dollars to the Center for Inquiry endowments.* Gifts and endowment income will fund projects including:

Council for Media Integrity

Formed just weeks after its inclusion in the Ten-Year Plan, the Council for Media Integrity will monitor and rebut media programs that convey unfounded claims and mislead the public about science. Members include Steve Allen (chair), Stephen Jay Gould, and many others. CSICOP will invest in electronic infrastructure to facilitate rapid response to irresponsible programs.

Adult Education

The Council cosponsors the Center for Inquiry Institute, which has already expanded its offerings to include a new three-year certificate program in science and skepticism. Sessions are scheduled in Amherst and Los Angeles.

Enhancing Library Resources

The Center for Inquiry's skeptics' library—already the finest of its kind in the world—needs expanded funding to enlarge its core collection and add electronic media. Worldwide modem access to the library's catalog is already nearly complete.

*Combined endowment goal of CSICOP and the Council for Secular Humanism, both nonprofit tax-exempt educational organizations.

Steve Allen
Honorary Co-chair

Martin Gardner
Honorary Co-chair

Future of Science and Reason

The New Ten-Year Plan

To continue its leadership in the defense of reason, CSICOP has articulated a Ten-Year Plan designed to:

- *Promote science and reason*
- *Develop public support and participation*
- *Develop The Center for Inquiry as an education and research center*
- *Build up the Committee's resources*

The Center for Inquiry attracts global media attention with scholarly conferences and events like this public "Friday the 13th Superstition Bash."

For the Young

To present skeptics' message more compellingly to the young, CSICOP will develop new materials—ranging from age-appropriate print publications to audio and video cassettes and instructional courseware. Goals include enhanced understanding of science and improved critical thinking skills.

Regional Outreach

With the establishment of The Center for Inquiry - West (Los Angeles), The Center for Inquiry - Midwest (Kansas City) and The Center for Inquiry - Rockies (Boulder, Colorado), giant steps have been taken to enhance direct field service to skeptical activists. Additional regional Centers are planned with expanded calendars of activities.

How Can I Help?

The Center for Inquiry Fund for the Future depends on generous support from each of our readers and friends. Gifts of cash, securities, and other assets are sought. A three-year pledge can make more substantial gifts surprisingly affordable. Many forms of planned giving arrangements can be arranged. All requests will be held in confidence.

Only financial support from skeptics and other friends of science can place the skeptical movement on a firm financial foundation.

At the first World Skeptics Congress in Amherst, New York, participants gave or pledged an unprecedented $201,000 to give the Fund for the Future campaign a vigorous start.

We invite you to make your commitment to the Fund for the Future today. For more information, complete and mail the postpaid reply card.

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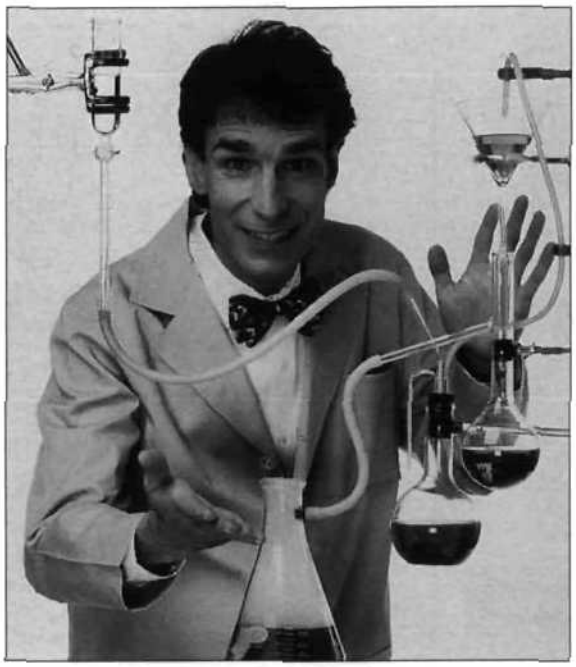


Bill Nye the Science Guy. ©Buena Vista Television.

not be tested is pseudoscience. The question we must always ask about every new idea is, how can you test it?

Science deals with all manner of outlandish concepts all the time, points out Nye, such as the idea that the earth is curved. What an outlandish proposition that once was! But it turned out to be correct, and he shows a model boat gradually disappearing off a curved surface. The ancients noticed that their ships did the same thing and didn't fall off the world. And during lunar eclipses they noticed that the earth cast a curved shadow on the moon. That kind of evidence persuaded them that the earth was round.

But other claims have turned out not to be true. Spirit photos and images of UFOs, for example. A young female photography enthusiast reveals how easy it is to make fake ghostlike photos. She shows the entire process. Ghostly images can be made to appear. Fake UFOs can be suspended from fishing poles. In another scene, a running water faucet not connected to any pipe dangles in mid-air, until the illusion is revealed.

A particularly effective segment deals with astrology. Test it yourself, Nye tells viewers. All you need is scissors, paste, and pen. Cut out some individual horoscope entries. Separate them from their "signs." Assign a code number to each. Ask your friends to determine which horoscope fits whom. Check the results.

James Randi, the magician and ardent foe of pseudoscience, makes several brief appearances, all to good effect. But the rest is all Nye and his cast of school-age boys and girls.

The production values are remarkable. Special visual effects, sound effects, and music are used effectively. The pace is quick. Humor is ubiquitous. Nye's energy and exuberance and love of good science as a process of finding out what's real invigorate and educate.

This is the kind of program skeptics have long wanted. Now if only someone would do the same for adult audiences.

—Kendrick Frazier, Editor

Science Gets Burned on TV Once Again: UPN's New Show, *The Burning Zone*

For some time, many skeptics have complained about the lack of scientists shown on TV. Why doesn't someone create a television series in which scientists are shown solving problems? goes the lament.

Well, as the old saying goes: Be careful what you wish for. It might come true! The United Paramount Network has released a new series called *The Burning Zone*. "Torn from today's headlines, UPN'S 'The Burning Zone' mixes science fact and science fiction," or so claims the advertising. Each weekly adventure is about an "elite bio-crisis team," founded by "the chief of a top secret chemical and biological task force." The team's continuing mission is to offer an immediate scientific response to outbreaks of new diseases. Surely, such a premise sounds promising to those who wish a boost for science, medicine, and science education. But don't get too happy too soon.

In fact, *The Burning Zone* has more in common with that morally enigmatic media cliché, "the cop who can't work within the system," than it does with the actual world of real-life science and medicine. The leader of the "task force," Dr. Edward Marcase (played by Jeffrey Dean Morgan), is "a brilliant young virologist." Yet he's a virologist who can't work within the system. While cop shows often delight in police who break rules and trample on the constitution they've sworn to uphold, here we are offered a doctor who tramples on the scientific method, a system of reasoning by which he is expected to prove his results.

The publicity materials describe Marcase as "among the best scientific minds fighting the viral war—but he also has a bent towards the mystical . . . . For Marcase, science cannot always fully explain the things he has seen. He often finds himself faced with a crisis on the outer edges of medical science—with one part rooted firmly in the unknown." The writers and producers apparently fail to understand that science is not supposed to fully explain everything people see. It is, instead, a method by which one can attempt to explain and ultimately come to understand things. And by rejecting this method, and featuring a scientist who rejects science, the show's producers have alienated those who normally would have been excited by a series dealing with scientists combatting deadly viruses.

In the premier episode we're treated to the handsome, yet surly, Marcase (it's the 90s—surliness is in!) driving much too fast in a convertible whose license

The cast of *The Burning Zone* in the lab. Photo: Michael Grecco ©UPN

plates say "Ebola." A state trooper begins to chase him, but rather than pull over, he speeds to the secret antivirus-task-force headquarters where armed guards let him in and chase off the pesky state trooper at gunpoint. In other words, a typical scientist on a typical day at a typical lab. And, no, I am not making this up.

Marcase's boss doesn't care or even mention that he's just produced a needless armed confrontation in which someone could have been killed. After all, Marcase is a brilliant young virologist and they're, apparently, above the law. Not just human law but, as we'll soon see, scientific law. Marcase is introduced to the other members of the team. We have Dr. Kimberly Shiroma (Tamlyn Tomita), a beautiful, yet surly, molecular geneticist, and Michael Hailey (James Black), a security specialist and expert on the history of plagues. He's tough and handsome—yet surly. The members of the team scowl at each other a bit, act mean, and describe the self-destruct system in their big old house/secret headquarters/antiviral bat cave.

They go down into the basement where they've got an anthropologist plague-victim strapped to a bed in a virus-proof room. Now lest one wonder, this particular virus seems to turn people into vampire-zombies. The virus also has a hive mind and causes people to act like possessed demoniacs with the strength of four men. . . . That's enough to give you and idea.

I contacted the publicity department at UPN, and a publicist generously returned my call. I voiced my concern as to what role a science advisor plays on a show featuring sentient viral-vampire-zombies. She said the use of a scientific consultant allows them to do scientifically oriented shows as they wish, but that will not always be a concern. "Besides," she stated, "how can anyone really say whether viruses are intelligent or not?" The publicist said she'd fax me the eighteen-page transcript of the pre-broadcast publicity press conference.

From the transcript, it is obvious that the producers and writers think they can insert science into the show whenever they feel like it. The actors describe scientists as "eggheads" and "brainiacs" during the press conference. One voices his strong belief in UFOs and the impending changes coming with the advent of the millennium. Viruses, the producers state, are used as a metaphor for evil. Apparently, real viruses are not enough of a threat in themselves—they are more dramatic as a metaphor for something else. Throughout it all, perplexingly, the producers hope that the show will somehow inspire young people to "become virologists." Nice thought, but I must ask how.

As I try to find something positive to say about the show, all I can come up with is that Tamlyn Tomita is an attractive woman (even if she is being surly). But the problem isn't that UPN put a bad show on the air. They've done that before, several times. (In fact, this show followed *Homeboys in Outer Space*, another televised disaster.) Furthermore, I think it's safe to predict that by the time this reaches print, the show will either be canceled or radically revised. The problem is that someday somebody's going to come along and say, "Why aren't there any shows about scientists on TV?" And UPN's answer will be, "We tried that once. We put on a show called *The Burning Zone*. It was about scientists who tried to cure viruses. Scientists curing viruses is an intellectual concept, right? Nobody watched it. People don't watch intellectual shows about scientists." And they'll miss the point. People won't watch *The Burning Zone* because its stupid. And a stupid show featuring science is still a stupid show.

* * *

Since first writing this piece, I have caught two more episodes of *The Burning Zone*. The second was actually not bad and what I had originally expected from the series. The plot focused on the team's efforts to identify, understand, and safely remove a stockpile of thirty-year-old biological-warfare agents that had been created and abandoned by a mysterious secret organization. The third, unfortunately, dealt with a being (hinted to be Satan or some other supernatural demon) who spread a mind-altering virus by offering fruit ("forbidden fruit," of course) to unsuspecting people who would then become evil. Although the show has potential, I remain convinced that its writers lack the scientific and medical background to write a show about scientists battling viruses and, instead, are forced to write stories involving silly monsters. This is a shame because anyone who has ever worked in the medical field knows that real viruses can be much more frightening than any imaginary monsters.

—*Peter Huston*

A freelance writer and former ambulance attendant, Peter Huston writes from Schenectady, New York. He is the author of two books, including the skeptical work Scams from the Great Beyond, *due out in January 1997 from Paladin Press. He does like television shows featuring silly monsters, just not when they make absurd claims of being based in science fact.*

Jean Houston: Guru of Human Potential

Outside New Age circles, the public knew little about Jean Houston until Bob Woodward, in his 1996 book *The Choice,* devoted ten pages to how Houston and Hillary Rodham Clinton became good friends. As everyone now knows, Hillary Clinton had many sessions with Houston during which, as a mental exercise, the First Lady held imaginary conversations with Eleanor Roosevelt and Mahatma Gandhi. She balked at conversing with Jesus, calling such a dialog "too personal."

As Houston and Mrs. Clinton later made clear, in no way did the First Lady think she was in touch with the spirits of Mrs. Roosevelt and others. It was no more than what Houston calls one of her "mind games." She describes herself as a philosopher and psychologist who never attended a séance and has not the slightest interest in spiritualism.

This is true. Nevertheless Houston and her husband Robert E. L. Masters have an abiding interest in channeling. Famous channelers such as J. Zebra Knight claim to be transmitting messages from actual discarnates or entities in higher worlds, but Houston and Masters see channeling from an entirely different perspective. They are convinced that channelers, while in trance, are in contact with what Carl Jung called the "collective unconscious" of the human race. Deep inside our minds are the "eternal archetypes"—unconscious memories created by our evolutionary history—memories that are the sources of great wisdom.

Houston and Masters began their careers by experimenting with LSD and other hallucinogenic drugs as a way of tapping the collective unconscious. Their first book, *Varieties of Psychedelic Experience* (1966), created a sensation among young people then experimenting with such drugs at the urging of the late Timothy Leary. After LSD was legally banned, Houston and Masters turned to nondrug techniques for exploring what they called the "inner self," especially techniques based on hypnotism and mental imaging.

For three decades Houston and her husband conducted thousands of pseudochanneling sessions with subjects at their Foundation for Mind Research, now in Pomona, New York, located in a house built by actor Burgess Meredith. Subjects are put into a trance state during which they seem to speak with the voices of persons long dead. For example, one woman patient transmitted striking messages that purported to come from an ancient Egyptian goddess called Sekhmet. Masters' 1988 book *The Goddess Sekhmet* (reprinted 1991) is about these sessions.

Neither Masters nor Houston think an actual Egyptian goddess spoke through the woman's lips. At the same time, they are overwhelmed by the beauty and wisdom of her messages and the messages that come through other "channelers" when they make contact with the collective unconscious.

Hillary Clinton may not be aware of Houston's belief, shared by Masters, that persons in a trance state can have heightened powers of ESP (telepathy, clairvoyance, and precognition).

These views of Houston and Masters are covered in some fifteen books they have written independently or together. The two most influential are *Mind Games: The Guide to Inner Space* (1972) and *Listening to the Body* (1978). Earlier books authored or coauthored by Masters include *The Cradle of Erotica* (1963), about sexual practices in Africa and Asia, and *Eros and Evil* (1962), on the relation between sexual beliefs and the burning of medieval witches.

A good account of the psychic opinions of Houston and Masters can be found in Jon Klimo's *Channeling: Investigations on Receiving Information from Paranormal Sources.* The book was published in 1987 by the New Age publishing firm of Jeremy P. Tarcher, husband of the ventriloquist Shari Lewis.

Houston told Klimo:

> These [channeled] "entities" as we call them—Seth or Saul or Paul or Jonathan—are essentially "goddings" of the depths of the psyche. . . . They are personae of the self that take on

Martin Gardner's latest book is The Night Is Large: Collected Essays, 1938-1995 *(St. Martin's Press), published in July 1996.*

> acceptable form so that we can have relationship to them and thus dialogue. . . . [T]he traditional archetypes do not have for many people the power they once held. People are in a kind of free-form archetypal search. And so you get the Seths and the Salems and the myriads of very personal guides that are filling the psyche.

In 1979 Ken Carey, a young Missouri farmer, began channeling an entity named Raphael (perhaps the Bible's archangel) and later Jesus himself. Carey published his channeled gibberish in two preposterous books: *The Starseed Transmission: An Extraterrestrial Report* (1982) and *Vision* (1985). "As I communed with these spatial intelligences," Carey wrote, "our biogravitational fields seemed to merge, our awareness blend, and my nervous system seemed to become available to them as a channel for communication."

Carey's channeled material swarms with the usual New Age buzzwords—unity, vibrations, wholeness, harmony, love, and so on—without conveying anything significant. Nevertheless, Houston assured Klimo that the Starseed Transmissions are "perhaps the finest example of 'channeled knowledge' I ever encountered."

Although Houston repeatedly denies that channelers are in contact with individuals who have died, she comes close to saying that they are in touch with minds outside their own brains. Here is how she put it to Klimo:

> I think the universe is filled with intelligence. Some is embodied, some is disembodied, and ultimately probably none of it is disembodied. It may have *minus n-dimensional structure or go* through a black hole to a negative particle structure. But I think everything has structure or pattern. And I think it is how you define embodiment. If it's embodiment of protein or computer or chemicals, then we have a problem. If you think of embodiment as perhaps of frequency which is pulsed, they may not even be in space, they may be across time.

Houston is fond of what is called the *holographic universe*. Like a hologram, every portion of a holographic universe in some way contains the whole. Klimo reports Houston as saying:

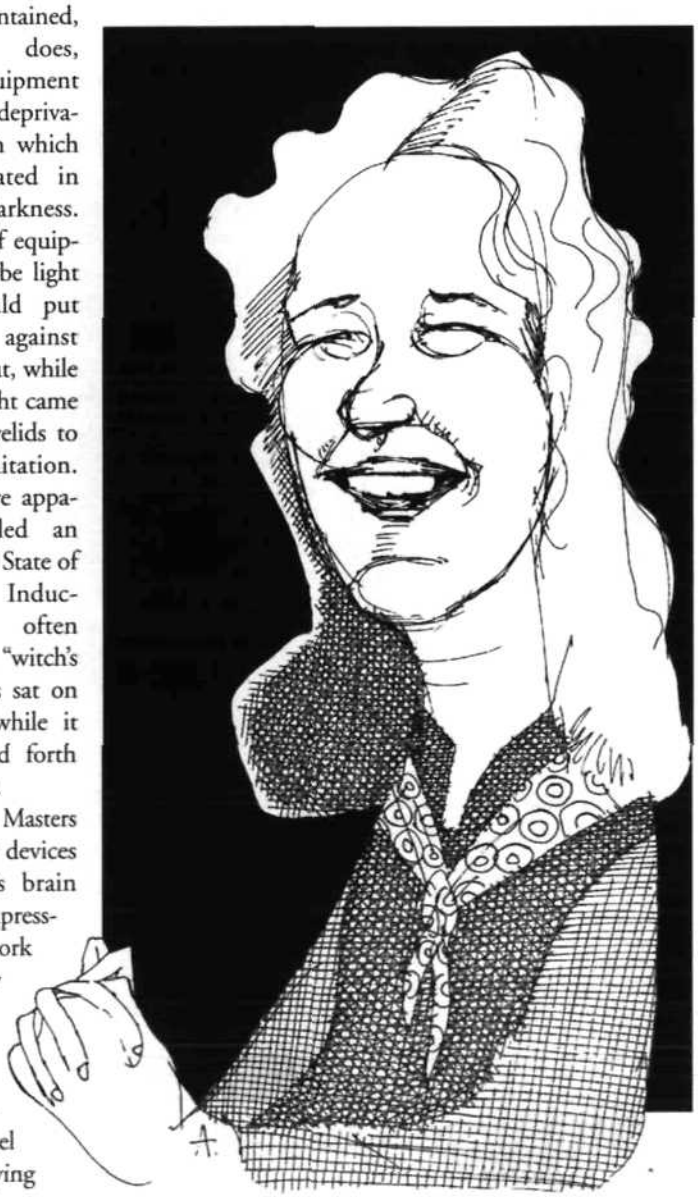
> *If the holographic theory has any proof* to it, then it suggests that everything is ubiquitous [omnipresent] with everything all the time anyway in this simultaneous-everywhere matrix universe. And that would take care of a great deal of the channels . . . Certain individuals are able to raise the gates or lower the ice or become diaphanous, be stretched very thin, so that this ubiquitous, simultaneous-everywhere-all-the-time information is available to human beings . . . Then you've got to project a persona [a source] to contain the ubiquity of the information, otherwise you're not going to take it.

The Foundation for Mind Research was originally headquartered in an apartment in Manhattan on East 86th Street. Its laboratory contained, perhaps still does, biofeedback equipment and a sensory deprivation chamber in which subjects meditated in silent pitch darkness. Another piece of equipment was a strobe light box—you would put your forehead against the box, eyes shut, while the flickering light came through your eyelids to enhance meditation. The most bizarre apparatus was called an ASCID (Altered State of Consciousness Induction Device), often referred to as a "witch's cradle." Subjects sat on it blindfolded while it swung back and forth like a pendulum.

Houston and Masters believe that such devices can make one's brain work faster, compressing an hour's work into just a few minutes. A novelist, for example, might see in a flash how to finish a novel he had been trying for months to complete. In the early days of their collaboration, Houston and Masters conducted experiments in dream telepathy with the parapsychologists then running the dream laboratory at Maimonides Medical Center.

Houston likes to tell about an incident that occurred when her father Jack was a professional comedy writer for Bob Hope, George Burns, Henny Youngman, and other comics, and for the ventriloquist Edgar Bergen. I quote again from Klimo:

> One time my father and I came into Edgar's room. He didn't know we were watching him. Edgar was talking to Charlie and we thought he was rehearsing, but he was not rehearsing. He was asking Charlie questions:



H. Alonso Alvarez de Araya

> "Charlie, what is the nature of life? Charlie, what is the nature of love?" And this wooden dummy was answering quite unlike the being I knew on the radio. A regular wooden Socrates, he was. It was the same voice but it was a very different content altogether. And Bergen would get fascinated and say, "Well, Charlie, what is the nature of true virtue?" and the dummy would just pour out this stuff: beauty, elegance, brilliant. And then we got embarrassed and coughed. Bergen looked around and turned beet red and said, "Oh, hello, you caught us." And my father said, "What were you doing?" And he said, "Oh, I was talking to Charlie. He's the wisest person I know." And my father said, "But that's your mind; that's *your* voice coming through that wooden creature." And Ed said, "Well, I guess ultimately it is, but I ask Charlie these questions and he answers, and I haven't the faintest idea of what he's going to say and I'm astounded by his brilliance—so much more than I know." To me that was a classical channeling instance where the dummy was used as [an] amanuensis of depth structures of Bergen's mind.

An ad for Houston's 1980 book, *Lifeforce: The Psycho-Historical Recovery of Self,* is headed, "For the first time in human history we can become fully human." By using the special exercises in this book, the ad continues, "we can relive the whole of human history in our own lives—healing the traumas of ages past and present as we resolve and heal the crises of our own emergent selves. As a result, what may have been lost of the promise and potential of these historical and personal ages may be found again—and used to restore the balance between our inner and outer space."

Houston's 1982 book, *The Possible Human: A Course in Extending Your Physical, Mental, and Creative Abilities,* was reviewed this way in a psychic magazine called *New Realities* (Vol. 5, No. 2, 1983):

> Houston maps out a route leading from the diminished realm of the human-all-too-human to an expansive sensory-intellectual-mystical sphere of the superhuman, what the great contemporary Hindu mystic Aurobindo termed Gnostic being or what Houston likens to the Yiddish archetype, the Mensch.

Houston is tireless in conducting workshops around the world in which she uses a bewildering variety of techniques designed to raise the "human potential" of her students. In 1989 at a conference at the Oasis Center, in Chicago, her workshop was organized around the concept of Pangaea. This is a name for the massive continent that existed two hundred million years ago before it broke up into the present continents. Houston took Pangaea to symbolize the primitive races which, in the words of a brochure for the workshop, "contain DNA-like codings that can lead us back to an understanding of who and what we truly are. Jean and her associates devise exercises, processes and practices to reawaken our senses and our memories of these codings throughout our body/brain/mind systems. We find ourselves quickened and empowered to join as partners in the evolutionary process, and to claim our place as true citizens of Panga[e]a. . . . [O]ur time at Oasis this year will be spent on empowering the archetypal creator of, and dweller in, Paradise."

The brochure continues, saying that workshop participants will study "the wise ones of primal cultures such as, perhaps, the Bushmen of the Kalahari and, also, perhaps, those huge-brained mammals who millions of years ago chose to return to the sea, the whales and dolphins."

In *The Possible Human,* Houston says that when she was a junior at Barnard College she was "president of the college drama society, a member of the student senate, winner of two off-Broadway critics' awards for acting and directing . . . and had just turned down an offer to train for the next Olympics." (She had been a fencing expert in high school.) The deaths of family members and friends plunged her into a profound depression. She says she felt like Job, even calling out to God, "Where are the boils?"

Houston attributes her recovery to classes taught by Jacob Taubes, a Swiss professor of religion at Barnard. After that, she writes, "I was off and running and haven't shut up since." After turning down a seven-year contract with Paramount Pictures, she participated in digs in Egypt and Greece, but soon abandoned archaeology to concentrate on what she calls "the archeology of the self." Houston claims an ability to read Latin, Greek, and Egyptian hieroglyphs. She writes of friendships with such notables as Teilhard de Chardin, Martin Buber, Aldous Huxley, Reinhold Niebuhr, Paul Tillich, Helen Keller, Joseph Campbell, and Margaret Mead.

There is no doubt about her close mother-daughter-like relationship for many years with the elderly and ill Margaret Mead. Mead was a strong believer in psychic phenomena and the reality of visits to Earth by extraterrestrials in UFOs. She became a director of the Foundation for Mind Research. Houston is also a good friend of Mead's daughter Mary Bateson, who accompanied Houston on many of her sessions with Hillary Clinton.

Now fifty-seven, Houston is still a striking woman who likes to say that the Greek goddess Athena is her "archetypal predecessor." Her speech is in a flowery New Age jargon, so vague and murky that it is often difficult to understand. Here, for example, is a typical passage from *The Possible Human:*

> Like sunlight and nutrients of earth and air organizing around the buds of springtime, in creative states the budding intentions are in resonance with the holonomic reality, evoking from the primary order the proper nutrients needed to allow for the emergence of the physical expression of the creative intention, be it a novel, a symphony, a dissertation, a relationship, a business, or a community enterprise.

There was what Houston calls her "messianic period" during which she motorcycled "all over east Texas saving people, and preaching and doing 'miracles' like curing people of stuttering." She says she was once thrown out of New York's High School for the Performing Arts "for trying to convert students to a purer lifestyle." On several occasions she has claimed to have a doctorate from Columbia University. According to *Newsweek* ("Soul Searching," by Kenneth Woodward, July 8, 1996), she refused to make changes in her thesis and the degree

was never given. Later, in 1973, she did obtain a doctorate in psychology from a school in Cincinnati called The Union Institute. The school was not accredited until 1985.

Houston taught at Marymount College, a Catholic school in Tarrytown, New York, from 1965 to 1972. Although not on the faculty, she was a visiting scholar at the University of Oklahoma in 1980 and a lecturer at Hunter College in 1961.

Houston has close ties with the Apollo 14 astronaut Edgar Mitchell, founder and head of the Institute of Noetic Sciences, in Sausalito, California. Mitchell and members of his institute buy almost everything on the psi scene. Houston says she assisted Mitchell in readjusting to life on Earth after he returned from space. After the flap with Hillary Clinton, Mitchell was quoted as saying: "I would like to support Jean Houston as one of the more worthy and capable scientists, philosophers, and thinkers of our period."

It is usually impossible to know the core beliefs of a president and his wife until long after they leave the White House. Bill Clinton belongs to a southern Baptist church. Hillary Clinton attends a Methodist church. This tells us nothing about whether either one of them shares the paranormal convictions of Jean Houston. It would be interesting to know. □

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INVESTIGATIVE FILES

JOE NICKELL

Sleuthing a Psychic Sleuth

On February 7, 1996, I appeared on the *Mark Walberg Show,* a television program produced in the Big Apple.

Among other guests—who included an alien abductee and her hypnotherapist, a UFO conspiracy theorist, and a pair of ghost hunters—there were two "psychics," one of whom claimed to assist police departments. He was Ron Bard from southern New York state.

Walberg asked, "Ron, how did you discover this ability?"

Bard replied, "Well, it's been in my family for quite a few generations. I've solved over 110 murder cases and returned 150 missing children in my career so far," he boasted.

"And how did you help them . . . ?"

"The one that stands in my mind most," Bard replied, "was two girls found in plastic bags in Harrison, New York. Anybody can call the Chief of Harrison Police Department and find this out for fact," he challenged.

I resolved to do just that.

Bard continued: "They found two girls in plastic bags. We went to the scene. The girls weren't identifiable. We identified the girls, found an unmarked key in the pocket, went to the south Bronx, unlocked the door—there is a lot of putting the evidence together inevitably—the key worked in the lock and that's how we found the murderer" (Bard 1996).

This certainly sounded like an amazing case of psychic power. Unfortunately, an examination of news stories relating to the case (Gannett 1984) and the testimony of the Harrison police chief (Dorio 1996a, 1996b) paint quite a different picture.

The first newspaper account was March 9, 1984. It reported that "the bound, frozen bodies of two unidentified women, possibly teenagers"—each in a green trash bag tied at the top with rope—had been discovered near Harrison High School. "One of the women was white, the other black," the newspaper reported. "Both had their hands tied behind their backs with twine, and were curled up, almost in a fetal position." A detective was quoted as saying that the young women appeared to have been dumped at the site after being killed—the cause of death not yet having been determined.

Subsequent reports told of the difficulty police were having in learning the identities of the two victims, neither of whom was carrying identification. The victims had been fully clothed, and there was no evidence of sexual abuse. They had died from suffocation. An item found in one of the plastic bags—which police would not identify at the time—led them to a particular area of the Bronx. The item was a key that had been made in a store on Southern Boulevard, so the police search was focused on that vicinity.

In just over a month, police circulars bearing descriptions and morgue photos of the victims, together with articles in a Spanish-language newspaper, had brought forth the parents of one young woman and the mother of another—each looking for a missing child. They identified their respective daughters as Daisy Rivera, 20, and Iris Comacho, 15, both of the Bronx and both Hispanic. The key in Miss Rivera's possession fit the door to her apartment. Before that, according to an April 15 newspaper account, police thought the key might have belonged to the murderer.

Eventually, after a five-month investigation of the case, in the aftermath of a drug raid in Yonkers, police were able to arrest three men for the murders. Eyewitnesses named those responsible and told how one man had ordered the older of the two females killed because he thought she was an undercover agent, and the teenage girl because she had said something that offended him. Each of the three killers was convicted and sentenced to two consecutive sentences of twenty-five years to life—the maximum under New York law (Gannett 1984).

Only a couple of news reports relating to the case referred to a psychic. And, although no name was given, it was not Ron Bard but his mother (Dorio 1996a). "She" was described in the news reports as a "volunteer psychic." Her involvement had been permitted by the lieutenant in charge of the case, who spoke of what he considered

her accuracy in the case. One account attributes to him the statement that she helped both to identify the bodies and hone in on the murderer, while another account quotes him as saying, "She helped primarily for identification." In fact, she helped in neither way.

If the psychic had indeed helped in the identification, the lieutenant would have to have withheld that information from his own detectives. We know this because a major detective on the case was the current Harrison police chief, Louis Dorio, who insists that "the identification was done by sheer police work, not a psychic" (Dorio 1996b).

Indeed, the lieutenant himself admitted that "what she told us didn't really lead to things, but after we discovered answers, we could confirm what she told us." This, in fact, is the major technique used by so-called "police psychics" and it is called *retrofitting*. The alleged clairvoyant tosses out several "clues," like "water" and "the number 7." Typically, these are merely puzzling to the police, but after they solve the crime by ordinary if often dogged detective work, the psychic retroactively fits the "clues" to the now-known facts. Credulous police officers may even assist in this. "Water" can be a creek, lake, pond, ocean, etc., or Riverview Drive, a water tower overlooking the site, a rainy day, or—well, you get the idea. "The number 7" could be Highway 7 or 70, even 27; or it could refer to the number of miles the murder site is from town, the number of people in the search party, a number in a license plate, a period of time, or some other interpretation.

The psychic does not even need many of the "clues" to be counted as hits; the rest will be conveniently forgotten, or dismissed as the natural consequence of an imperfect "power," or heroically interpreted. (In one case "a church" was determined to mean property owned by a church.)

Chief Dorio gave the following account of the Harrison murder investigation:

> I was one of the primary investigators on what we refer to as the "Bag Murder Case" in 1984. As such, I never worked with Mr. Bard. I did meet his mother a couple of times and she provided some visions or whatever on things that at the time were of no use to our investigation. Some of the things she said, a true believer may give credence to; for example, she held a key and said, "I see a red door." That information did not help in the investigation as our area of search was the south Bronx and there are thousands of red doors. After we found the residence (through investigation), it did turn out to have a red apartment door. That is an example of the information supplied. (Dorio 1996a)

In other words, the psychic was using the technique of retrofitting. Chief Dorio continued:

> This case was solved by information cultivated and investigated by those of us who were involved.
>
> Our arrest and convictions were due to diligent police work, not visions. (Dorio 1996a)

He added somewhat sarcastically, "I do not remember seeing Mr. Bard on the witness stand during the trial," and he concluded, "I would strongly deny that any involvement by Mr. Bard solved this case" (Dorio 1996a).

This is in sharp contrast to the statements and claims made on the *Mark Walberg Show* by Ron Bard. The case that he cited as apparently his best, "the one that stands in my mind most," was one that as far as the police and reporters knew was solely his mother's. It is true that on the TV show he said "we," instead of just "I," which we may now see as a possible reference to his mother's involvement. If he did in fact collaborate with her on the case, it is curious that he has so completely distorted the basic facts—stating for example, that a key led to the discovery of the murderer when in fact it did not. The bottom line is that neither Bard nor his mother helped solve the double homicide. If this is one of the best cases he can cite, his other cases must be poor indeed.

References

Bard, Ron. 1996. Interviewed on the *Mark Walberg Show,* New York City, Feb. 7.

Dorio, Louis A. 1996a. Letter to Joe Nickell, Feb. 20.

———. 1996b. Follow-up letter to Joe Nickell, n.d., together with annotated newspaper clippings. (See Gannett 1984.)

Gannett Westchester Newspapers. 1984. Various clippings from March to September (inclusive) supplied by Harrison, N.Y., police chief Louis A. Dorio and annotated by him.

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MEDIA WATCH

C. EUGENE EMERY, JR.

How Do TV's Pseudoscience Specials Rate? And the Case of the Quadro Tracker

How popular are pseudoscience specials on television? Not particularly. A check of the Nielsen ratings for eight such programs that aired during the winter and spring of 1996 reveals that such shows never win their time slot and often come out near the bottom of the heap in the ratings race.

Yet the impact of a poorly rated show can still be enormous, with millions of people exposed to warped facts in a world where good science is often swamped by bogus blather.

Consider the lowest-rated show of the eight: "Psychic Detectives," which aired on the fledgling United Paramount Network (UPN) on February 6. It drew only 3 percent of the people watching television. It was the lowest-rated show for the network, the lowest-rated show of the evening, and the lowest-rated special to be aired that week. Yet 2.5 million people saw the program, in which psychics seemed to be giving new clues to unsolved mysteries and no reliable tests were done with *solved* crimes to see if the psychics had any talent in the first place.

The highest-rated pseudoscience shows all appeared on NBC. "Prophecies III" (February 28) got 14 percent of the viewers—nearly 13 million individuals. "Prophecies IV" (June 8) pulled in 13 percent of the audience, or 8.8 million viewers. Both were two-hour programs that used dramatic music and selectively presented information to give an uncritical look at forecasts about the fate of the world. A February 4 special on Atlantis was on 12 percent of the television sets turned on during that time slot (an estimated 11.3 million viewers), and a June 8 repeat of "The Mysterious Origins of Man" special, which said that dinosaurs and humans lived at the same time, also got a 12 percent share, or 6.9 million viewers.

The other three shows in this sample were "Put to the Test" (April 29, ABC), which garnered 8 percent of the audience; "Miracles and Visions" (March 31, Fox), which got 7 percent; and "Real Ghosts 3" (February 13, UPN) with 4 percent. To put these numbers in perspective, the top-rated comedy series *Seinfeld* typically is on about 32 percent of the television sets in use on Thursday evenings and has about 32 million viewers. *The X-Files* has gotten nearly 11 million viewers and a share of 19 percent.

Clearly the networks aren't airing these shows because they draw huge ratings. Although the "Origins of Man" rerun and "Prophecies IV" won second place in their timeslots for NBC, those two programs still ranked as the two lowest-rated shows that the network aired that week. The UPN, Fox, and ABC programs also ended up at the bottom of the ratings barrel for each respective network.

So why do the networks keep airing pseudoscience specials?

First, they're cheaper to produce than entertainment programs and specials. In addition, producers hoping to score big ratings and, ultimately, get a commitment for a weekly series may be willing to sell a show to a network for a bargain-basement price.

Such programs may also be used for "counter-programming," in which a network offers a radical alternative on a night when it can't get respectable ratings anyway. "Prophecies III," for example, did very well (with a 14 percent share) even though it was pitted against the Grammy Awards on CBS, which drew 23 percent of the viewing audience.

Finally, the networks sometimes have a financial interest in such specials, according to my colleague John Martin, the television writer at the *Providence Journal-Bulletin.* Broadcasting them may be part of a push to sell the programs to other countries or promote sales if the show is going to be available on videocassette.

Pseudoscience specials may not be the most popular fare on the tube, but the willingness of the networks to broadcast them in the face of mediocre ratings demonstrates that the programs are giving the networks a return on their investments.

And with the pseudoscience theme more popular than ever, things show no signs of changing.

* * *

One of the few bright lights in the media's coverage of the paranormal in

1996 came from *Dateline NBC* when it aired its exposé of the Quadro Tracker, also known as the Positive Molecular Locator.

The Quadro Corporation in Harleyville, South Carolina, which made the Tracker, claimed the device could be used to find drugs, weapons, explosives, currency, drug users, and missing people from one hundred miles away or more.

Ranging in cost from $400 to $8,000 and consisting of a retractable portable radio antenna mounted on a handle, it was essentially a dowsing rod, sensitive to the subconscious hand movements of the operator. The customer slipped a large plastic "programming chip" (also known as a "locator card," "tuned frequency chip," or "signature card") labeled "gunpowder," "marijuana," "cocaine," or whatever the operator was looking for into the device, and the antenna was supposed to point the way. The device was also sold as the Golfball Gopher to help golfers find lost balls, and Quadro had suggested that it could be used to pinpoint both people and donated blood infected with the AIDS virus.

More than a thousand units were sold to police departments, school systems, and correction facilities based on testimonials and "tests" in which Quadro personnel were present or the unsuspecting operator knew the direction of the object he was searching for and unconsciously let the antenna point to it.

"I was probably as skeptical as they come, but I've seen it work," said the security director for one Kansas school system, demonstrating how skepticism is useless when people don't understand science, especially human psychology.

Quadro, in its product literature, said the Tracker "consists of an inductor, conductor, and an oscillator." When researchers at Sandia National Laboratories in Albuquerque, New Mexico, examined the device at the request of the National Institute of Justice (NIJ), X-ray photos showed no such thing. "There are no electronics, motors, or any other electrical devices inside the handle," according to the Sandia report, released through the NIJ. When the researchers opened the gunpowder chip, they uncovered a piece of plastic-coated paper that couldn't conduct electricity and had no trace of gunpowder.

One chip, according to an Associated Press report, "contained dead ants that had been frozen and put on paper with epoxy glue."

Based on all the test results, the Beaumont, Texas, office of the FBI issued a statement calling the device "a fraud."

If such a device really worked, it would be relatively simple to test it under conditions that would reduce the likelihood of luck or fraud. But the school officials and police officers who purchased Trackers, in a living testament to the sorry state of critical thinking skills among supposedly educated people, obviously had no idea how to perform such a test. *Dateline NBC,* after consulting magician James Randi, did.

First they collected testimonials from believers, including the assertion by Quadro vice president Raymond L. Fisk that the Tracker had a 90 percent success rate. Then the *Dateline* staff conducted some on-camera experiments to see if the device could live up to the claims. In one, the security consultant for the fifty-one schools in Seminole County, Florida, was unable to identify the locker that contained a pouch of marijuana. Using the Tracker, he later walked right past the pouch when it was resting in the pocket of NBC reporter Lea Thompson. In another test, a man trained by Quadro failed to select a film canister with marijuana in four out of five trials, a result expected by chance.

Two months later, on April 22, United States District Court Judge Thad Heartfield granted a permanent injunction against Quadro, saying the company, Fisk, and two other top officials were "engaged in a scheme to defraud" because "the defendants *knew* that there was no reasonable scientific basis" for Quadro's claims.

The case of the Quadro Tracker was more than the case of a device that did not live up to its claims. In his decision, Heartfield noted that the lives of innocent people can be ruined if they're falsely accused of possessing drugs, law enforcement officials risk having legitimate cases thrown out of court if they are tainted by the use of questionable techniques, and a reliance on a Quadro Tracker "poses a danger to anyone relying on the device" to keep weapons or explosives out of schools, airports, or office buildings.

The case was yet another example of how belief in pseudoscience isn't as harmless as many people think. □

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Implants and Gurus Are Everywhere

When a UFO supposedly crashed on Long Island and was being covered up by the authorities, according to John Ford of the Long Island UFO Network (LIUFON), we brought you the story (Fall 1993, p. 22). Recently, Ford sent around a letter to UFOlogists claiming that "newspaper sources, county, state, and federal officials" were conspiring to physically attack him and his associates, and to suppress information concerning not just one, but two, alleged UFO landings nearby.

And now, something even more bizarre has happened, if that's possible. According to the *New York Post* (June 14), Ford and his associate Joseph Mazzachelli were arrested and charged with planning to use radioactive materials to assassinate several Suffolk County officials and politicians. Police raided Ford's home and found several canisters of radium, a large cache of weapons, a mine detector, and a gas mask. According to District Attorney James M. Catterson, who apparently was one of the officials targeted, Ford's plan was to spread radioactive materials on the car seats of the intended victims and strew it around their homes, in the hopes of inducing fatal cancers.

Robert Sheaffer is an author, freelance writer, and connoisseur of implausible tales. He works in the computer industry in Silicon Valley, California.

In other UFOlogical developments, alien implants seem to be turning up everywhere, yet somehow we seem to be learning almost nothing about them. Whitley Strieber, the noted author of *Communion*, *Transformation*, *The Wolfen*, *Breakthrough*, and other imaginative works, placed the story of his own alleged implant on his World Wide Web page (http://www.strieber.com). He says that for years he has been carrying an alien implant in the back of his left ear, which has caused him to hear Morse code–like beeps, as well as voices. "In early April of 1996 I endured fifteen minutes of horrific threats to kidnap and slowly kill me. During this event, which took place in the afternoon, I had an image of a black late-model Ford Mustang sitting in the street. I went outside and saw the car. Two men were in it. When they observed me, they sped away. Subsequently, on May 29th, I heard a male voice say, Whitley and Anne come in please." Strieber attempted, without success, to obtain a radio signal from the implant in his ear. Several other people have, however, had alleged implants removed, and I eagerly await the publication of these amazing findings in the scientific journals.

"Do you have them?" Strieber asks. "The implants have been found most commonly on the left side of the body, the scars on the right. A lump in the pina of the ear, a grey spot in a toe or finger or along the calf muscle are all indicators of possible implants. Small, unexplained scars covering indentations where tissue has inexplicably disappeared are another indication. So far, no implant has had a scar directly above or even near it." Scan the scars.

* * *

As you probably heard, First Lady Hillary Rodham Clinton made news recently because of sessions in which Jean Houston helped her carry out imaginary conversations with the late Eleanor Roosevelt as a mental exercise. The spin-doctors immediately went to work, claiming that this was just an exercise in "creative visualization." To prove that nothing spooky was involved, Houston appeared on *Larry King Live*, guiding the host to "creatively visualize" the wisdom of departed sages.

What is not generally realized, however, is that Jean Houston and her husband, Robert Masters, are esteemed by parapsychologists for their ESP research, especially upon subjects who are in the "psychedelic state." In their book *Varieties of Psychedelic Experience*, they describe a series of experiments they conducted during the 1960s to determine whether a subject's ESP skills improved after ingesting LSD. They did. More recently, Masters and Houston conducted a series of experiments intended to establish telepathic contact with the Egyptian goddess Sekhmet. According to the publisher's

blurb for Masters' book *The Goddess Sekhmet*, "As a result of the seeker's direct encounter with Sekhmet in a series of telepathic trance states, he is given the teachings of the sacred books of the Sekhmet that were lost, pillaged from the temples, and destroyed by unbelievers" (http://www.ashlandweb.com/create/sekhmet.html). It's pretty hard to pass that off as "creative visualization." (For more about Jean Houston see Martin Gardner's column in this issue.)

As for Bill Clinton, his guru of choice for difficult times was Tony Robbins, well known as a motivational speaker and promoter of "mind-over-matter firewalking." No word out of Camp David as to whether anyone walked across the barbecue. However, given that Clinton won the November 5 election handily, it would seem that gurus can deliver the goods.

Of course, Bill and Hillary Clinton are not the only famous people to be Dancing with Gurus. The *National Enquirer* (April 16, 1996) describes how Hollywood's highest-paid actress, Demi Moore, "finds serenity with her guru in India." The star of *Striptease* is said to have become a disciple of the New Age healer Deepak Chopra and expects that his teachings will enable her to reach age 130. "To help Demi avoid serious illness, Indian-born Dr. Chopra teaches her that good thoughts create disease-fighting chemicals in the body." Perhaps they do, but they clearly do not keep away legal troubles. The *New York Post* (June 24, 1996) reports that Chopra has been accused of plagiarism not once but twice concerning his book *Ageless Body, Timeless Mind*. In 1995, Chopra was accused of plagiarizing a passage from *The Metheuselah Factor* by Dan Georgakas. Chopra's representatives blamed it on an editing error and promised that correct attribution will appear in later editions. Now Robert M. Sapolsky charges that in that same book Chopra plagiarized from Sapolsky's textbook, *Behavioral Endocrinology*, and states he is "strongly considering litigation."

As for John Travolta, star of the movie *Phenomenon*, in which a light-like encounter temporarily gives him supernatural powers (later explained as due to a brain tumor), he doesn't seem to need a guru, because apparently he *is* one. The *National Enquirer* (July 16, 1996) reports that in real life Travolta is "having near-miraculous success in healing sick and injured people by laying on his hands—and modern medicine can't explain it." The *Enquirer* claimed he has had such success in helping sick and injured people that his co-workers have taken to calling him "St. John." One of Travolta's biggest successes was said to be when he did a backstage "touch assist" to heal the sore throat of the rock singer Sting in front of a large crowd of people. "The laying on of hands worked wonders for Sting's throat. In fact, he gave one of his strongest singing performances that night," the *Enquirer* reported. An unnamed friend of Travolta is quoted as saying, "In the realm of Scientology, John is classified as an Operating Thetan, which means he is a spiritual being—someone who's able to control matter, energy, space, and time." What we don't understand is, if Travolta is an Operating Thetan, why doesn't he do his own movie stunts?

* * *

In this election year we've wanted to bring you more paranormal coverage, but there hasn't been a lot to report. The Nashua (New Hampshire) *Telegraph* reported (February 13) that Jack Mabardy was running as a write-in presidential candidate in the Republican primary on a platform of a strong defense against UFO invasions. Mabardy warned that Americans are woefully unprepared to face a hostile alien invasion, saying, "We don't know who these people are, we don't know if they are friendly or hostile." He urged "common-sense" training in the schools that would warn students to avoid all contact with extraterrestrial visitors. He didn't win.

Perhaps the most impressive political prediction in recent years comes from the *Psychic Reader*, published in Berkeley, California (January 1996). Its 1996 prediction for the political scene: "In the United States there will continue to be dissension between political parties, with no sign of resolution." □

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For more information, contact Barry Karr, Executive Director of CSICOP at **(716) 636-1425**. All inquiries will be held in the strictest confidence.

The X-Files Meets the Skeptics

When Chris Carter, creator of the popular Fox TV drama The X-Files, *spoke at the CSICOP Twentieth Anniversary Conference, the result wasn't quite what anyone expected.*

Chris Carter, creator and executive producer of The X-Files, *was the invited luncheon banquet speaker for the first day of the World Skeptics Congress and CSICOP Twentieth Anniversary Conference in Amherst, New York. The banquet, in the atrium of the State University of New York at Buffalo Center for the Arts, was packed. Tables were jammed together. Other people listened from second floor walkways or while standing against the walls. We present here essentially the transcript, only slightly edited for brevity, of that fascinating event, which consisted of informal introductory remarks by Carter followed by an extensive question-and-answer session. Not all of the audience's questions were recorded, but Carter summarized many of them before answering. Carter was introduced by reporter Eugene Emery of the* Providence Journal-Bulletin, *who, even though he had written several somewhat critical pieces about* The X-Files, *enthusiastically supported that Carter be invited to speak and served as his host. We begin with Emery's remarks.*

—Kendrick Frazier, Editor

I'm Gene Emery, science writer, computer columnist, and occasional contributor of Media Watch columns for the SKEPTICAL INQUIRER.

I've written about a lot of things in my twenty-five-year career, but few topics have produced more angry mail than my criticisms of *The X-Files*.

Since the show's debut on the Fox network on September 10, 1993, the adventures of two FBI agents thrown into cases with supernatural twists have gathered a growing legion of fans.

Originally based on *The Night Stalker,* a Darren McGavin series with an occult theme, *The X-Files* premiered with the words: "The following is inspired by actual documented events" and proceeded to depict an alien abduction. Stories of monsters, psychokinesis, and the face on Mars followed.

Dana Scully, the FBI agent who is supposedly the skeptic of the pair, was depicted as close-minded, ill-informed about the supernatural, and unwilling to recognize extraordinary phenomena that were clearly occurring on the show.

In short, the program—although fiction—seemed to be a nightmare for people interested in encouraging the public to take a rational look at the supernatural.

But *The X-Files* has evolved into something far more interesting, something even hard-core skeptics can appreciate.

The "actual documented events" line was dropped after the first show.

These days, when FBI agent Fox Mulder gets involved in a case because it seems to have supernatural overtones, he sometimes discovers a more down-to-earth explanation.

When the FBI agents come across something that appears supernatural, instead of ooohing and aaahing over the phenomenon from afar, they pursue it, they dissect it, the try to get to the bottom of it, and they're not afraid to report a prosaic explanation if they find it—unlike the promoters of the supernatural with whom we're all familiar.

Although the show posits that extraterrestrials *really did* crash at Roswell, the show has been downright nasty to the Gulf Breeze UFO photographs and the Fox network's own "Alien Autopsy" specials.

Even as actor Peter Boyle played an insurance salesman who could correctly predict the date and nature of anyone's death, the show skewered the so-called police psychics who are always predicting that you'll find the missing person's body "near water."

In the fictional world of *The X-Files,* world governments *really are* violently covering up past contacts with extraterrestrials, monsters *do* lurk in the shadows, and people with psychic powers *do* exist.

Yet, ironically, this fictional show that promotes the paranormal on one level sometimes demonstrates more skepticism and more critical thinking than the so-called "reality-based" television shows that feature paranormal topics, where the producers ignore the research showing less sensational explanations for strange phenomena, and the skeptics, if they're lucky, get a ten-second sound bite that gives the illusion of balance.

Open for debate is whether *The X-Files* could do a better job of educating viewers about the general public's superstitions and folklore, while maintaining the show's dramatic tension and impressive ratings.

Mr. Carter and his show have received many honors, including the 1995 Golden Globe Award for Outstanding Drama Series, even Emmy nominations this past year, and the outstanding television series award from the Academy of Television Fiction, Fantasy, and Horror.

Last year, Mr. Carter was nominated for an Emmy Award for "Outstanding Writing in a Dramatic Series." He was also nominated for the Edgar Allen Poe Award by the Mystery Writers of America.

Ladies and Gentlemen, please welcome Chris Carter.

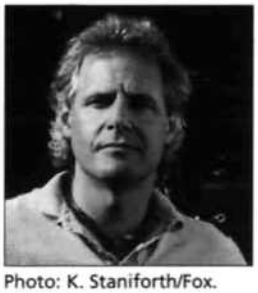


Photo: K. Staniforth/Fox.

Hi! I'm Chris Carter, heretic. I agreed to speak to this group a long time ago, and I didn't realize that I was going to be eating lunch here. When they told me I was going to be "had for lunch," I got kind of worried.

I'm anticipating some very tough questions here today, but I feel that I should face my accusers and try to best explain why I do what I do and how I think I serve the purpose of what it is you do.

I'd like to read to you a letter that was sent to me just recently from a person who is a high school teacher. I think that this is what I anticipate will be the kind of questions and certainly the sentiment that I'll be addressing here today. It says:

"Dear Mr. Carter:

(This is a man named Tucker Hiatt from the University High School in San Francisco.)

"In just a few days you will be speaking before the World Skeptics Congress. Your audience there in Amherst will not consist of your adoring fans. Rather you will be—politely and with good humor, I hope—criticized as a key purveyor of anti-skeptical, antiscientific, and generally irrational thinking among the television viewing public. They may argue that *The X-Files* is actually hurting people.

"I am sending you the attached copy of Carl Sagan's *The Demon-Haunted World* for two reasons: first, so that you may know your enemy and thereby be prepared for the skeptical onslaught at Amherst, and so you might even come to adopt these skeptics' point of view and therefore be willing to make the modest occasional and purely evolutionary change in *The*

X-Files described in the paragraph below.

"I am a high school physics and philosophy teacher. I cannot easily afford to send twenty-six-dollar books to strangers. Nevertheless I'm persuaded that you have the power to do something wonderful for the television watching world.

"If you will peruse pages 373 through 477 of this book—*The X-Files* is discussed on page 374—you will find Mr. Sagan bemoaning the current poverty of prime time television's depiction of science. 'Where in all these programs are the joys of science, the delight in discovering how the universe is put together, the exhilaration of knowing a deep thing well?' I'm afraid that *The X-Files* in particular is helping to make this the most entertained and least scientifically informed—no, the least rational—nation in the industrialized world.

"I believe that in this instance you are hurting people. Our children and my students, at least, deserve better. To that end I ask you to consider 'The Y-Files.' Just once every month why not run an *X-Files* episode that is shorter than the requisite forty-eight minutes? As the episode ends you could air a brief epilog called 'The Y-Files' that would finish the hour. 'The Y-Files' might involve any of the seven themes that Mr. Sagan identifies on page 377 of his book, in particular, the presentation of real scientific investigations into the preceding episode's paranormal hook. It could be both thrilling and enlightening. It needn't be expensive, either. (I don't know how he would know, by the way.) That week's *X-Files* set could be used. Dozens of scientists there at the World Skeptics Congress would love to set up quick and entertaining experiments for free.

"Mr. Carter, please give this book a read. Please also consider why 'The Y-Files' is a good idea. Generations of scientifically literate citizens, better able to exercise their healthy skepticism because of a few minutes of *X-Files* time, may be deeply indebted."

I have to say, I couldn't agree more. I believe one of the things television should do is educate, and I believe it doesn't do it enough. But I'm here to tell you that I am a dramatist, I create entertainment, and I am unapologetic for that. I think that what I do is actually a great service to science. I'm willing to defend what I do in that way. I believe it draws people to science.

I have a brother who's a Ph.D. He got his degree in physics from Berkeley. He's now a research scientist at the National Institute of Standards and Technology in Washington, D.C. I asked him, "Can I mention your name, Craig, to these great skeptics, here at this convention?" He said, "Why?" He was a little nervous that he would all of a sudden happen to be allied with me, the purveyor of antiskeptical material.

Anyway, I asked him because my brother was a great lover of science fiction as a kid. He read everything, all the science fiction canon. It is, he says, what drew him to science, what made him want to be a scientist. Even though he's not a big science fiction fan now, that is what, in fact, made him want to be what he is.

I believe in the same way *The X- Files*, even though it may not give some people as balanced an approach as you may like, does the same thing. It is smart, intelligent, it doesn't write down, it is in fact built on a foundation of real and good science, as good as we can make it. We're very, very rigorous about the kind of research that we do on the show. I talk with scientists regularly. I have many friends who are scientists, who are contributors to the show in research. I think I can safely say that as far as any entertainment show on network television, that my show is, I believe, the most responsible to hard science.

On top of that, we deal with the paranormal, which I know you are all interested in—or disinterested in. We do that in a way—that's the way we tell our stories, and even though we come to no conclusion at the end of the show, we, in fact, do say or suggest that these possibilities may exist; but they are always leavened by Agent Scully's scientific point of view, she being the great big anchor of science, toning down the wonder of Agent Mulder's need to believe.

If you've seen the show, if you're a fan of the show, you'll know that from the very beginning, in the pilot episode, that Agent Mulder, who plays the believer on the show, had a poster on his wall that said: "I want to believe." It didn't say, "I do believe," or it didn't say, "This is real, this is all true." He had a desire to believe; he wanted to find the truth that was out there.

I believe there is something that is very human, that we all want a religious experience. Even if we don't believe in God, I believe we're all looking for something beyond our own rather temporal lives here that is going to shake our foundations of belief. That's a personal feeling of mine, and it has sort of infused the whole show.

I don't have a lot more to say, or to defend for that matter. I'm going to open up the floor for questions, because I am sure there are many.

I surely have been reading the book that was sent to me, and I turned to a page and maybe this is a good place to begin our discussion because, while I'm very impressed with this book and I've been a reader of Mr. Sagan's for quite a long time—I read *Broca's Brain* as a young man, and I read *The Dragons of Eden,* also as a young man, and got a lot out of them. I should also mention that I am a skeptic; I'm not a believer or a purveyor, in the schlocky sense of the word, of this kind of pseudoscience, but I do use it for what I do, which is storytelling.

I want to read you a paragraph that kind of stuck out to me and it's this. Mr. Sagan is saying, "An extraterrestrial being newly arrived on Earth scrutinizing what we mainly present to our children in television, radio, movies, newspapers and magazines, the comics, and many books, might easily conclude that we are intent on teaching them murder, rape, cruelty, superstition, credulity, and consumerism. We keep at it, and through constant repetition many of them finally get it. What kind of society could we create if instead we drummed into them science and a sense of hope?"

I'm confused, and maybe you guys can answer this question for me: how science creates hope in the world. I'll just throw

that question out to you because I was thinking about what kind of hope it presents to me: the hope that a giant meteor is going to hit the earth and we all die, that my cell phone gives me a brain tumor—I just want to know what that means to you, what kind of hope you think science can give in our lives today. So that's my question to you. [Pause.] No answers.

[Inaudible question from audience.]

I agree with you. Medical science gives hope that we may live long, fruitful lives, but it actually does just that. In fact it creates a long life here and it doesn't answer anything about our emotional lives or our need to . . . .

[Inaudible question.]

It does. Quality of life. I agree. But I'm trying to make a point, and I'm being a little provocative about it: I think people's need to believe in these superstitions—paranormal and the like—has to do with their emotional lives, which is what I deal with as a dramatist, and I think that sometimes gets confused. I believe that if mysticism or ghosts or magic were taken out of all literature or drama, we would actually lose a lot of great drama, including Dickens, Shakespeare, Gabriel García Márquez. So this is something that is used in a lot of drama to treat and limn human experience and existence. . . .

I'm trying to make a point—this is what I do as a dramatist, this is the subject matter, how I use it. I'm not trying to be a purveyor of pseudoscience. It is merely a dramatic tool for me.

[Inaudible question.]

The question is: Do I think a desire to believe is different from the search for truth? I believe that they are different, but they are not inseparable. I think that scientists search for the truth and they do it in a very noble way. I don't want anyone to get the wrong idea—I'm here because I respect what you all do as scientists and I think that it's a noble pursuit and calling. I believe, though, that—I'll tell you an interesting story in a second—that there is indeed, beyond the truth, beyond the facts, there is a need to have a spiritual life that for me is a need to believe, a need to believe in an afterlife or God, for that matter.

One of the reasons I'm here is because I had an interesting meeting with two people who I know have been associated with this group, the magicians Penn and Teller. They came into my office, and I had a very interesting meeting with these guys. They're very, very smart guys and very, very certain that there is nothing beyond the pale, that there is in fact nothing that science cannot explain.

I asked them if they believed in God, and they said no. And I asked: Do any scientists believe in God? And they said: "None of the important ones." [Laughter.] I just found that somehow, I don't know, very disturbing. I think that need to believe is, in fact, even with the most hardened atheist. I think that there must be at some point in their lives a need to at least search for some kind of personal answers for existence itself, and I think that's a feeling that infuses the show and certainly informs it in the stories that we tell.

The X-Files' David Duchovny (Agent Mulder) and guest star Roy Thinnes. Photo: K. Staniforth/Fox.

[Inaudible question.]

The question is: Agent Scully represents a skeptical point of view, but she was abducted herself; and, now, how can she maintain a skeptical point of view? If you're a regular watcher of the show, you'll know that Agent Scully was in fact not abducted by aliens; it hasn't been explained who she was abducted by, and the whole question of alien life has never been answered in three years of the show. We've suggested it strongly, but last year, people who know the mythology of the show know that we took away that very thing. We actually explained it away, which is, I believe, what I've been trying to do—I've been trying to offer a sort of balanced approach, saying that this could be just the depredations of a government who wants to keep the truth from us, which I believe is absolutely true.

[Inaudible question.]

The question is, to summarize, why is it that even if we present things from a skeptical point of view, the paranormal always seems to outweigh the skepticism? My intention, when I first set out to do the show, was to do a more balanced kind of storytelling. I wanted to expose hoaxes. I wanted Agent Scully to be right as much as Agent Mulder. Lo and behold, those stories were really boring. The suggestion that there was a rather plausible and rational and ultimately mundane answer for these things turned out to be a disappointing kind of storytelling, to be honest. And I think that's maybe where people have the most problems with my show, certainly this group, I believe. But it's just the kind of storytelling we do, and because we have to entertain and because I set out in this show when I created it—all I wanted to do, and still really all I want to do in a very smart way is to scare the pants off of people every Friday night. That's really the job they pay me for, and that's the thing I'm supposed to do.

[Inaudible question.]

Thank you very much. I'll tell everyone I resisted the label of science fiction in the beginning because I never liked science

Agent Mulder searches for answers in an episode of *The X-Files*. Photo: K. Staniforth/Fox.

fiction as a kid. I never read it. I honestly admit to you I've never watched a single episode of *Star Trek*. I resisted the label, but I realized then that the label actually brought a certain audience to me and that what we are doing is science fiction, because it is fiction and it is speculative science. So I'll accept the label because I think it's fitting.

[Inaudible question.]

I think it's a good question. Am I a mongerer for the paranormal; am I in fact by telling these stories leading people to believe they have been abducted by aliens and/or any of these other paranormal things? I think it's a question that really is not dissimilar to the one about violence on television: Is violence on television promoting violence in society? I think it's a bogus argument, to be honest. I don't believe people are empty vessels waiting to be filled up with kooky ideas and going out and acting on them. I believe that mostly people are smart and reasonable, and the people who are going to be influenced by these things will be influenced by them. I can't be responsible for them; that is not my responsibility. I try to present a fair, intelligent, reasoned, and entertaining—to be honest—approach to these things. I think that there's a great debate right now about arts and artists' responsibilities. There's an interesting article in *Vanity Fair*, a conversation between Oliver Stone and John Grisham about the artist's responsibilities. Several people have actually killed others and themselves after watching the movie *Natural Born Killers*. The question John Grisham had is actually more than a question. He's placing some blame on Oliver Stone for creating a product which promotes a certain type of behavior. I think that it's a very dangerous suggestion. I think it certainly says a lot about the freedoms in this country. If, in fact, I've led people to believe that they've been abducted by aliens, I'm truly sorry—unless of course they have been abducted by aliens.

[Inaudible question from audience member Steve Allen.]

The question from Mr. Allen is: Is there a disclaimer on the back of my show, or should there be disclaimer, saying that this is not real or shouldn't be perceived as real? It's a valid question. I really don't know how to answer it. I can tell you that when you create entertainment and you don't put it forth as the truth, that it is not our responsibility at the end of the show to do anything other than to say, "This does not represent actual events and/or individuals." I don't know that it's my responsibility to say that I've just created a fiction that is a fiction. I think what I do is not astrology, it is drama; and those are two different kinds of things. It's a valid question, though, but I just don't see the need for it myself.

[Long inaudible question from audience.]

The question or statement was about my question about hope. This gentleman says, what greater hope is there than the one provided by self-knowledge, knowing the universe and knowing ourselves? My feeling is that you're right. That is, in fact, all we can do. But beyond that, people have great needs to believe that there is an afterlife. This is my belief; it's not necessarily my personal quest. But I know about the emotional needs of people, and I think that's what drama and fiction deal with.

[Long comment from audience; applause.]

I'm in violent agreement with you. Preaching false hope. Nor do I preach or promote quackery or the like. I offer up these stories, parables in some way, in order to possibly take a better look at ourselves and to entertain; once again to scare us with what is, in fact, I think frightening, which is our fear of violent death, et cetera. But I agree with you. We shouldn't promote things that are, in fact, antithetical to a good, real approach to science and medicine.

[Inaudible question.]

I thought this was supposed to be hostile.

Member of audience (Neil deGrasse Tyson, astrophysicist): One of the goals of good writing is to anticipate the reaction of the reader so that one can communicate more effectively. For you to humbly admit that your show is fiction, while a significant portion of The X-Files *audience thinks the content is fact, means that you have misled them—inadvertently or intentionally. Occasionally, after your show, I get a phone call from a friend of mine who asks me, "Was what I saw on* The X-Files *really true?" or "Could that really have happened?" Not everybody has an astrophysicist as a friend whom they can call to sort out fact from fiction on television. For this reason, I believe you are setting back the nation's attempts to combat science literacy. Do you believe your show is harmful to viewers who may have difficulty sorting the fact from the fiction? Note that television shows such as* The Twilight Zone *and* The Outer Limits *did not confuse their audience about whether they were fact or fiction, yet they were nonetheless successful.*

Do you believe it's harmful? . . . I believe anyone who takes this at face value and this doesn't force them to ask themselves questions is a person who is gullible anyway, and you have to do your job as a scientist. [Boos from audience, followed by long comment from audience, laughter.] I think this is why there are fiction and nonfiction sections in bookstores. I think

that people who take this as the truth are perhaps not looking at it carefully enough. It never purported to be the truth. It is a fictional show, it is drama, it is entertainment; and it never tries to say that this is the truth, you should believe this. In fact, we are never conclusive about anything. There is a dramatic story told, and so I think that if these people are believing it, they have a willingness and a want to believe that is uninformed. I'm going to turn to this side of the room; this is a very hostile side of the room. [Laughter.]

Member of audience: Hi. I'm interested in the sexual reversal that I see in your show. I believe that women are more gullible than men [shouts of NO! from the audience]. I'm interested to know whether you were conscious of this and made a conscious decision, or whether it just turned out that way.

It's a good question. There is in my show the woman as scientist, as a skeptic, and the man as believer. It's a role reversal of the gender stereotypes. It was a very conscious thing on my part to do that. [Smattering of applause from audience.] I see I'm winning points back by the minute.

[Inaudible question.]

To be honest I try very hard to stay away from those classic science fiction conventions because my feeling is the show is only as scary as it appears to be believable. Now, I know that probably doesn't sit well with this group, but I must stay away from things like time travel and science fiction conventions because it gets away from the groundedness of the show, and Agent Scully would no longer have a valid point of view.

Member of audience: If you could create a show as effective as Orson Welles' "War of the Worlds," would you put it on, and where would you draw the line?

I never thought of it. We did an episode this year called "War of the Coprophages," and it was about cockroaches from outer space, believe it or not, and it was a kind of war-of-the-worlds idea. It didn't get people around the country thinking that their towns were being invaded by alien cockroaches, but it was a kind of play on that. I don't believe that in this era of media saturation we could probably ever do that again. I think that it would be impossible. Would I do something that irresponsible? Certainly not. Anyway, I don't think it was irresponsible. Would I do something with that intention? It was never Orson Welles' intention to have the kind of reaction that he got.

Member of audience: You mentioned that there are literary devices in Shakespeare and in literature where ghosts and soothsayers are part of the plot. Let's face it: they're usually right. You always know if you see someone predicting something, it's going to happen in that particular episode. I'm wondering if you are saying to us that basically there are no dramatic devices to make the revealing of a hoax as interesting as always leaving it unknown and a mystery. Is that what you've run into? Does being a dramatist mean that you can't always have them revealed as a hoax?

I'm not sure how to answer the question. I use these devices because I think it's a way to reflect back on ourselves. I feel that I should hold up a mirror to existence and the human drama. As far as hoaxes go, all I can say to you is that the idea of dramatizing a hoax is a very downbeat idea. I believe there are places to do that; there probably is a show in which you could do that and it probably is a very good idea to explore doing that. It just doesn't work that well on the kind of things that I do.

Female member of audience: I just felt that one thing that was left out is that Scully is one of the finest role models for women that we have.

Her comment was that Agent Scully, who is a scientist and medical doctor, is a great female role model. I'm very proud of that because I think there aren't a lot of good female role models on TV. I was very selective in casting her role, because I wanted someone who actually wasn't a sex-kittenish, TV-bimbo type. I was really up against it because the people who hire me and pay me money were very concerned about Gillian Anderson, the woman who plays Agent Scully—they were concerned how she might look in a bathing suit. It was very hard to convince them, in fact, that she wasn't going to be in a bathing suit. So, thank you for the comment.

Assistant Director Skinner (Mitch Pileggi) and Agent Scully (Gillian Anderson). Photo: K. Staniforth/Fox.

Member of audience: My question concerns the demographics of your audience. What percentage of your audience is children under the age of, say, twelve, and how do you think they're taking in the show?

My key demographic—I feel like a scientist now—is nineteen- to forty-nine-year-old adults, and the smallest segment of our audience is two- to, I think, eleven-year-olds. They're watching the sitcoms on Friday nights. So my feeling is that this show probably is too scary for some younger kids, but once again I think that what it does is the same thing science fiction did for my brother; it will draw people toward science rather than away from it, and make them possibly smarter and more rational and more skeptical actually.

Member of audience: I think all of us here feel that we have pretty good critical thinking skills and that the basis of our group is in imparting critical thinking skills to everyone. I enjoy your show. I do employ my critical thinking skills, and I believe that's what the big concern with the show is, that we are worried about people watching it who just go "OOH" and don't even think about it, don't try to evaluate the evidence. But I also think that's our job. We are to go home and help impart critical thinking skills to everyone we come in contact with, and you keep on making good shows.

Thank you.

Member of audience: Do you think that a SKEPTICAL INQUIRER–type program could survive on commercial TV?

I think that if it was done right and it stars Pamela Anderson Lee, yes. [Laughter.] I don't know, really.

Member of audience: Tell us more about the conspiracy. Lots of your episodes seem to be running around conspiracy. Tell us more about it.

Yes, my show does deal with conspiracies. I was a child of the Watergate era. I distrust authority. I believe that the government does lie to us regularly and people are working against our best interests on an ongoing basis. So the conspiracy ideas in the show come as a result of my great belief that we're being suckered. That's the last question I'm going to take. I have to call my actors up here. . . .

Scully, Science, and Skepticism

Chris Carter concluded his appearance at the CSICOP conference asking two volunteers from the audience to read a portion of an early script of The X-Files.

Carter: I have to call my actors up here because I'm going to actually prove something, a great big experiment with Mulder and Scully. This is a scene from the pilot episode for *The X-Files.* It's a scene in which Agent Scully meets Agent Mulder for the first time. It's a little lengthy but there's a point that's very important. Listen to the words, and I think you're going to understand how I approached the show from the beginning and where we came from, if you don't know the show.

SCULLY: Agent Mulder, Hi! I'm Dana Scully. I've been assigned to work with you.

MULDER: Well, isn't it nice to be suddenly so highly regarded. So, who did you tick off to get stuck with this detail, Scully?

SCULLY: Actually, I've heard a lot about you. I'm looking forward to working with you.

MULDER: Really? I was under the impression that you were being sent to spy on me.

SCULLY. Listen, if you have any doubt about my credentials or qualifications . . .

MULDER: You're a medical doctor, and you're teaching at the academy. You did your undergraduate degree in physics: "Einstein's Twin Paradox: A New Interpretation, Dana Scully's Senior Thesis." Now, there's a credential: rewriting Einstein.

SCULLY: Did you bother to read it, by any chance?

MULDER: Yes, I liked it. It's just, in most of my work the laws of physics rarely seem to apply.

SCULLY: Could you be a little bit more specific?

MULDER: Maybe you can give me a medical opinion, though. Oregon female, age twenty-one, no explainable cause of death, nothing in the autopsy, zip. Two distinct marks, however, are found on her lower back. Can you ID these marks, Dr. Scully?

SCULLY: Needle punctures maybe? An animal bite? Possibly an electrocution?

MULDER: How's your chemistry? This is the substance found in the surrounding tissue.

SCULLY: It's an organic, isn't it? I'm not sure. Is it some kind of synthetic protein possibly?

MULDER: Beats me. I've never seen it either. But here it's found again in Sturgess, South Dakota—

SCULLY: Do you have any kind of theory about this?

MULDER:—and again in Shamrock, Texas. I have plenty of theories. What has me stumped is why a Bureau policy is to label these cases as unexplained phenomena and ignore them. Do you believe in the existence of extraterrestrials?

SCULLY: I've actually not given it much thought in my life.

MULDER: As a scientist?

SCULLY: Well, logically I'd have to say no, of course, given the distances needed to travel from the far reaches of space, the energy requirements, they would definitely exceed—

MULDER: Conventional wisdom. That girl in Oregon, she's the fourth member of her graduating class do die under mysterious circumstances. When convention and science offer no answers, might we not consider the fantastic as a possibility?

SCULLY: The girl obviously died of something. It was natural causes and it's plausible something was missed in the postmortem if she was murdered. It's possible there was a sloppy investigation. What I find fantastic is any notion that there are answers beyond the realm of pure science. The answers are there; you just have to know where to look.

MULDER: And that's why they put the "I" in FBI. See you bright and early then, Scully. We leave for Oregon at 8 A.M.

[Applause.]

Carter: Thank you very much. That was the original scene and it really set up Dana Scully's skepticism in the show. I think that it's clear that we came at it from a very skeptical point of view with her. And I've always thought that Scully's point of view is the point of view of the show. I'd also like to use this as an example: I know that there are a lot of magicians here involved with this group, and I think that most of them like to dispel the idea that there is actually magic; and I would like to use it as proof positive that in fact what I do on Friday nights at nine is magic; and that these fine folks here were kind enough to show us a little bit of that.

Thank you very much. [Applause.]

The Significance of the Millennium

The millennium has no natural terrestrial, sidereal, or cosmic basis or importance. But the last years of the twentieth century are the first in human history in which there has been a worldwide recognition that a millennium measured by a universally accepted calendar is about to end and a new one begin.

LEE LOEVINGER

Early in 1996 the Rainbow Room in New York and the Savoy in London announced their facilities were fully booked and they could accept only waiting list reservations for the night of December 31, 1999. Other popular places for New Year's Eve celebrations have similarly been receiving requests for reservations more than three years in advance of the beginning of the year 2000. A cruise-line fleet of sailing ships has been fully chartered as of September 1996, and another cruise line is taking reservations (with deposits) for "Turn of the Century" cruises.

Such lengthy anticipation is most extraordinary. There are several reasons for such interest; but it is at least partially attributable to our addiction to the decimal (or base ten) sys-

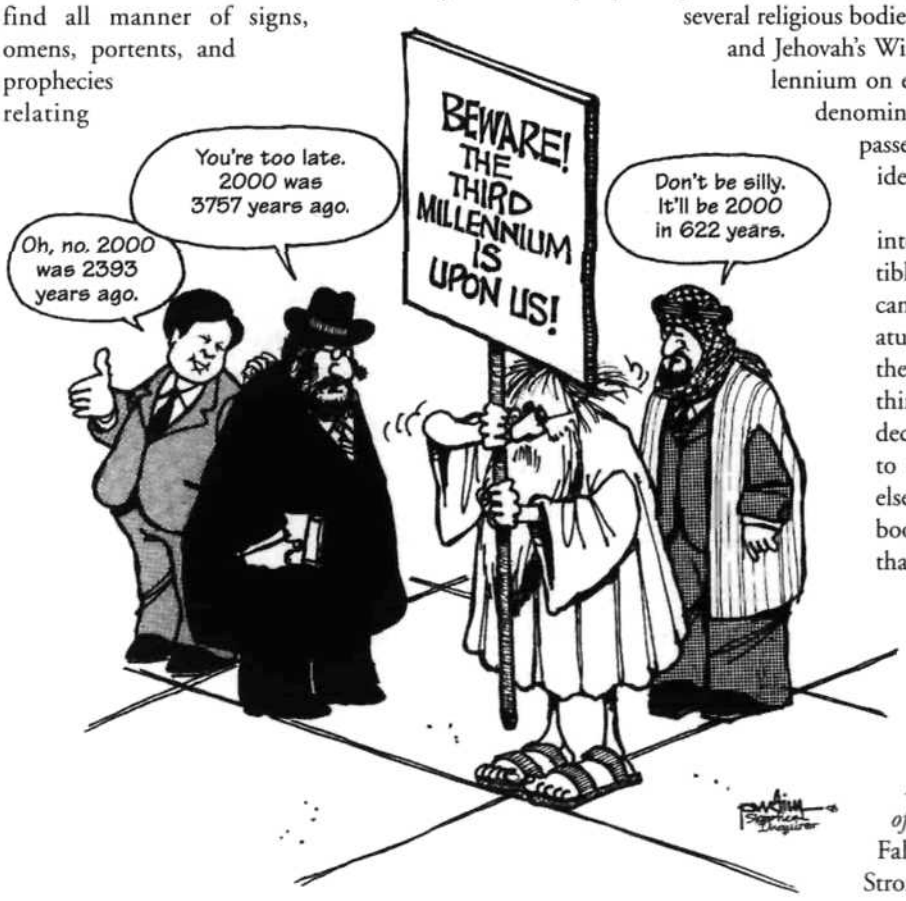
tem of numeration which leads us to be unusually attentive to occasions that mark a new decimal date, such as the end of a decade. But decades succeed each other with regularity, and seem to pass more quickly and become more commonplace as we grow older. The centuries are more notable. There are probably few people planning to celebrate the advent of the twenty-first century who have previously celebrated the passage from the nineteenth to the twentieth century. As for the millennia, there is not even a good historical account of the transition from the year 999 to the year 1000. So the simultaneous passage of a decade, a century, and a millennium will be not merely unusual, but actually unique, for as the story of the calendar related here discloses, this is the first time in human history that there has been a generally recognized transition from one calendar millennium to another.

This poses the question whether the coming of a new millennium is anything more than a social excuse for revelry as we turn three decimal calendar pages at once. At the same time, voices are heard reminding us that in addition to conventional social celebrants there are those who attach special and cosmic significance to particular calendar dates. The *New York Times* (July 20, 1996) reports: "As the year 2000 approaches, declarations that a vast metaphysical change will coincide with the turn of the chronological odometer have not lacked an audience. Twice in the past decade, for example, books that set dates for Christ's Second Coming sold well enough to generate numerous news stories."

As we draw closer to 2000 an increasing number of people find all manner of signs, omens, portents, and prophecies relating to the millennium. The imminence of a new millennium has stimulated Professor Harold Bloom of Yale to explicitly embrace Gnosticism, a pre-Christian antithesis of agnosticism. In *Omens of Millennium: The Gnosis of Angels, Dreams, and Resurrection* (Riverhead Books, 1996), Professor Bloom declares that the core of his and our national religion is an intuitive belief in a transcendental God who is not the Creator, which is a kind of millenarian spiritualism evidenced by a variety of omens everywhere.

In the jargon of many less philosophical believers, the new millennium is simply a "New Age." Others recall that in the New Testament Book of Revelation a period of one thousand years is foretold in which the devil will be chained and holiness will prevail on earth. This has given rise to several religious sects and differing interpretations. Premillenarians are Christians who believe that the Second Coming of Christ will begin the 1000-year period of righteousness, while Postmillenarians are Christians who believe that eventually Christianity will be accepted throughout the world and a 1000-year period of righteousness will be climaxed by the return of Christ.

A number of related Protestant denominations known as "Adventists" stress the doctrine of the imminent Second Coming of Christ. One of the earliest advocates of this view was the American Baptist preacher William Miller, who proclaimed that the Second Coming would occur between March 21, 1843, and March 21, 1844. When this and a subsequent prediction failed, many lost faith and the remainder split into several religious bodies, including the Seventh-Day Adventists and Jehovah's Witnesses. The concept of a religious millennium on earth is now rejected by most Christian denominations, but the term "millennium" has passed into popular usage as denoting an ideal or utopian period.


BEWARE! THE THIRD MILLENNIUM IS UPON US!
You're too late. 2000 was 3757 years ago.
Oh, no. 2000 was 2393 years ago.
Don't be silly. It'll be 2000 in 622 years.

Millennial fever has also seeped into intellectual fields not normally susceptible to popular fads. Harvard doctoral candidate Mihir Desai surveys recent literature and concludes that "[a]s we approach the end of a millennium, authors and thinkers in a variety of fields seem eager to declare the end of something—and unable to announce the beginning of something else." Thus the shelves of contemporary bookstores are lined with books declaring that the end of everything has come. These include: *The End of Nature* (Bill McKibben); *The End of History and the Last Man* (Francis Fukuyama); *The End of Architecture* (Vienna Architecture Conference, 1992); *The End of Physics* (David Lindley); *The End of Science* (John Horgan); *The End of Sovereignty* (Joseph Camilleri and Jim Falk); *The End of Isms* (Alexander Stromas); and *The End of Japan Incorporated*

The Pedantic Argument about the Beginning of the Millennium

This history is an effective response to the somewhat pedantic argument that the year 2001, rather than the year 2000, is the beginning of the twenty-first century and of the next millennium.

That argument is based on the assertion that there never was a year zero and that the first year of the calendar was numbered 1, so each century must end in a year designated by a decimal number ending with a zero. But this argument wholly ignores the fact that historically the Gregorian calendar did not begin with a year numbered 1, nor with any year numbered in single or double digits. The numbers assigned to years in the Gregorian calendar are based on a calculation of the year of Christ's birth, which, as noted, was probably erroneous and was three years late. By the time the present numeration of years was generally accepted, it was late in the first millennium.

If the western Europeans then using the Julian predecessor to the Gregorian calendar thought about the matter at all, they probably regarded the year 1000 as the beginning of a new century and millennium. The transition from a three-digit to a four-digit designation of a year surely would have suggested such a view. In any event, whether it was so regarded contemporaneously or not, it is reasonable to regard the year 1000 as beginning the tenth century and the second Christian millennium; the year 1900 as beginning the twentieth century; and the year 2000 as beginning the twenty-first century and the new millennium.

This view provides the "zero years" sought by those inclined to argue the matter. Indeed, considering the basis and historical development of the system of numbering years in the Gregorian calendar, if there is any error in celebrating the beginning of a new century and millennium in the year 2000, it is probably in celebrating too late rather than too early.

(Christopher Wood). Like titles exist proclaiming the end of: the nation state (Kenichi Ohmae and Jean Marie Guehenno); economics (Paul Ormerod); laissez faire (Robert Kuttner); affluence (Jeffrey Madrick); work (Jeremy Rifkin); equality (Mickey Kaus); racism (Dinesh D'Souza); affirmative action (Darien McWhirter); education (Neil Postman); bureaucracy (Gifford and Elizabeth Pinchot); intimacy (Philip Brown); marriage (Julian Hafner); and, of course, meaning (George Zito). (Source: *New York Times,* August 24, 1996.)

To appraise properly the significance of the next millennium, or any calendar date, it is necessary to know something about the nature and history of the calendar. From earliest antiquity, humans have regulated their lives by the alternation of days and nights and succession of seasons, and have established religious observations by phases of the moon. Thus human activity has been governed by (what we now know to be) the rotation of the earth on its axis, the orbiting of the moon around the earth, and the earth's orbit of the sun. Formal calendars, or schedules of these events, were not constructed until some time after the invention of writing in Sumeria (part of Babylonia) about 3100 B.C. (by modern reckoning), or some five millennia ago.

The basic problem for all calendar makers has been to find some simple relationship between the solar (i.e., terrestrial) day, the lunar month, and the tropical (i.e., seasonal) or solar year. Modern scientific astronomy and instrumentation have established the lunar month as consisting of 29.53059 days, the tropical or solar year as 365.242199 mean solar days, and each mean solar day as 24 hours, 3 minutes, and 56.55 seconds, calculated as the average time it takes the sun's ecliptic (or apparent path) to cross the meridian (or celestial equator) twice. To complicate matters further, recent studies indicate that the gravitational attraction of the moon and the sun on the earth cause the earth's rate of rotation to slow very gradually so that 900 million years ago the day was only about 18 hours long and there were more than 450 days in the solar year (*Science,* July 5, 1996, 100).

Unfortunately, the tropical or solar year and the lunar month are and have been incommensurable, and neither is evenly divisible by the length of the day. As a result, throughout most of human history there have been divergent and inconsistent calendars.

The earliest known calendar was a lunar calendar of Egypt based on sidereal observations. Because this was incompatible with either a lunar or solar year, Egyptians established a civil calendar that had 12 months of 30 days each, followed by 5 intercalary (or interpolated) days not assigned to any month. The year was divided into 3 seasons of 4 months each, called Flood Time, Seed Time, and Harvest Time. As this year had just 365 days, it was shorter than the solar year and thus shifted gradually with respect to the natural seasons. To provide for practical affairs and religious observations, the Egyptians established a second lunar calendar for use when the beginning of their lunar year came before the beginning of their civil year. Later a 25-year cycle of intercalation was introduced while the original lunar calendar was retained for agricultural purposes. So the ancient Egyptians had three different calendars used for three different purposes.

The Babylonian calendar was based on lunar phases, and a year contained 12 lunar months each beginning the day after a new moon was observed by the priests. An intercalary month was inserted at irregular intervals to help synchronize the calendar with actual seasons. Prior to 480 B.C. intercalations appear to have been wholly haphazard, and it is difficult or impossible to convert Babylonian dates to present calendar ones.

The Greek calendar was similar to the Babylonian; but before the sixth century B.C., Greek calendar reckoning was

entirely controlled by local authorities who decreed the beginning of each month and dates of intercalation. This led to wide variation among communities, and more than a hundred different calendars are known to have existed simultaneously in Greece. Later, after the sixth century B.C., a thirteenth month was inserted according to fixed rules, and this system was used until the Roman period.

The early Roman calendar, established by Romulus according to legend, originated as a local calendar for the city of Rome about the seventh or eighth century B.C. By this calendar, the year began in March and consisted of 10 months—6 of 30 days and 4 of 31 days—for a total of 304 days. The year ended in December and was followed by an uncounted winter gap. The second king of Rome added 2 extra months, January and February, to fill the gap and increase the number of days to 354. Intercalary months were added whenever the high priests thought necessary. But the priests were often remiss until the calendar months had receded about 60 days from their customary positions in the tropical or solar year. To make up for past deficiencies, Julius Caesar, on the advice of Alexandrian astronomer Sosigenes, extended the length of the year now calculated to have been 46 B.C. to 445 days and ordered that future years have 365 days with an intercalary day at the end of February every fourth year. This calendar is known as the Julian calendar. The plan was misinterpreted by Roman priests who used an intercalary day every 3 years until the mistake was discovered during the reign of Augustus about 8 B.C. All leap years were then omitted until the year 7 A.D., after which the normal sequence of the Julian calendar was resumed.

The Mayan calendar, in use in Middle America, had a year of 18 months of 20 days each. The years began at different times and in different seasons in different regions. Each year was known by the name of the day on which it began. Modern studies indicate the Mayan calendar had little to do with astronomy, and its calculations are not well understood.

The Mexican or Aztec calendar was similar to the Mayan, although not synchronous with it. The Aztec calendar had a year of 365 days with 18 months of 20 days and an additional 5 days. The Aztecs used a more primitive numbering system than the Mayans and lacked a precise way of recording dates.

Peru used an Inca calendar of which little is known. The Incas had no written language, but historians agree that they had a calendar based on observations of both the sun and moon and their relationship to the stars.

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No North American Indian tribes had a true calendar. The day was the basic unit of time, but there is no record of any aboriginal names for days, and apparently time was designated only by seasons and moons.

The Chinese had established a calendar by the fourteenth century B.C. based on a solar year of 365.25 days and a lunar month of 29.5 days. This early Chinese calendar was based on astronomy that was superior to that of other nations at least until about the thirteenth century A.D.

The early history of the Hebrew calendar is obscure, although we know it was based on lunar months. The modern Jewish calendar was introduced in the fourth century A.D. by Rabbi Hillel II and is dated from the legendary day of creation of the earth, calculated as being October 6, 3761 B.C. (according to modern notation), with years designated as A.M. for Anno Mundi, or "year of the world."

The Muslims use an Islamic calendar, the starting point of which is computed from the Hegira, the year of emigration in which Muhammad emigrated from Mecca to Medina, beginning July 15, 622 A.D. The years are lunar, consisting of 354 days, so months regress through all seasons every 32.5 years. A cycle of 10,631 days is used to govern intercalation for the sole purpose of keeping months in step with lunar phases. Thus this calendar pays no attention to seasons and 33 Muslim years are roughly equivalent to 32 solar years.

For all ancient calendars, the only unit of time longer than a year was the reign of a king or priest, so the earliest method of distinguishing years was by the naming of them after some royal exploit, such as a conquest or temple construction. In Assyrian and Hittite calendars, years bore the names of officials elected for those years. Later these practices were supplanted by dating years according to the regnal reign, with the count starting at 1 with each new king. While there was some variation in style for different calendars, an example of a full civil date according to an Egyptian calendar would be "Regnal Year 1, fourth month of Inundation, day 5, under the Majesty of King So-and-so."

In the sixth century A.D., a monk named Dionysius Exiguus, in calculating the date of Easter for the Pope, calculated that the year now designated as 1 B.C. was the year of Christ's birth. Because of this, he suggested that years thereafter be numbered consecutively to signify the Christian era and be designated A.D., for Anno Domini, or "year of the Lord." Modern chronology indicates that the birth actually occurred in 4 B.C., but the suggestion of serial numbering was welcomed by Christian scholars and was gradually adopted by Christian countries during the next 500 years.

Although there was some convergence among Christian countries during the period from the sixth to sixteenth centuries A.D. concerning numerical designation of years, there continued to be divergence as to when a year began. The beginning date of each year was governed by local tradition in most places. The most common initial dates were December 25, January 1, March 1, and March 25. In Great Britain, under the Julian calendar, the year had first begun on December 25, and from the fourteenth century A.D. on it had

begun on March 25, which continued until the adoption of the Gregorian calendar in 1752. In Athens the year began roughly in midsummer when new officials took office. Other Greek cities adhered to initial dates of the years of their arbitrary local calendars even after adoption of the Julian calendar throughout the Roman Empire. In countries of Middle America using the Mayan calendar, the years began at different times and in different seasons in each country.

Calendars used for setting religious holidays also differ as to beginning of the year. The Jewish calendar begins the year on varying dates in September (according to the Gregorian calendar); and the Islamic calendar begins the year in July. Greek and Russian orthodox Christian communities still reckon their religious holidays by the Julian calendar.

The year of the Julian calendar, which had been established in 46 B.C., was 365.25 days—11 minutes and 14 seconds too long. This error amounted to 1.5 days in 200 years and to 7 days in 1000 years. By 1545 A.D. the vernal equinox had moved 10 days from its proper position, falling on March 11 instead of March 21. This caused Easter to be celebrated too late in that year. The Council of Trent authorized Pope Paul III to correct the calendar, but Paul was unable to take satisfactory action and left the problem to his successors. In 1572 Gregory XIII became Pope and found proposals for reforming the calendar awaiting him. Pope Gregory XIII referred these proposals to Jesuit astronomer Christopher Clavius, who drafted a papal bull that was issued in 1582 establishing what is now known as the Gregorian calendar.

The papal bull of Gregory XIII decreed that the day after Thursday, October 4, 1582 A.D., should be called Friday, October 15, and the length of the year was redefined to be 365.2422 days. This also provided that no centennial year could be a leap year unless it was divisible by 400, so that 1700, 1800, and 1900 were common years, while 2000 will be a leap year. This produces a very accurate calendar in which the difference between the calendar year and the solar year is less than half a minute. The Gregorian calendar also firmly established January 1 as the beginning of the year.

The Gregorian calendar was immediately adopted for use in all Catholic countries, but Protestant countries opposed it at first. The British Empire and the American colonies did not adopt the Gregorian calendar until 1752. In order to bring their old calendar into synchronization with the Gregorian, the British declared the day following September 2, 1752, to be September 14. In many countries, including Great Britain and the American colonies, the calendar was termed "New Style" when it was conformed to the Gregorian.

In France, Italy, Luxembourg, Portugal, and Spain, the New Style was adopted in 1582; and it was adopted in 1584 by most of the German Roman Catholic states, Belgium, and part of the Netherlands. Switzerland gradually adopted it, beginning in 1583 and completing in 1812. Hungary adopted it in 1587. Then more than a century passed before the Protestant countries accepted the New Style. Denmark and the Dutch and German Protestant states adopted the New Style in 1699 and 1700, respectively, Sweden in 1753, Japan in 1873, and Egypt in 1875. Between 1912 and 1917 it was adopted in Albania, Bulgaria, China, Estonia, Latvia, Lithuania, Romania, Turkey, and Yugoslavia. The Soviet Union became Gregorian in 1918, and Greece in 1923. Today, the Gregorian calendar is in official use for civilian purposes throughout most of the world, although in India, Hindu religious life is governed by the Hindu calendar, which is based on lunar revolutions adapted to solar reckoning; and in Iran, the official calendar is Gregorian, but the Islamic calendar is also used.

As this very cursory survey indicates, the story of the calendar relating, as it does, to the earliest period of recorded human history, is not only complex but also confusing, as various sources give somewhat inconsistent accounts of some details. Nevertheless, the basic facts are clear and corroborated by all sources. The most fundamental aspect of all calendars, as illustrated by the foregoing survey, is that they consist of schedules for dividing time into days, months, and years, and assigning designations to such divisions

THE END IS NIGH! PREPARE TO MEET THY DOOM!
Personally I prefer the more generic kind of sign.
END OF THE WORLD WILL BE DEC. 31,
THE MAYAN KATUN END WAS HERE
THE END OF THE WORLD WAS 1000 A.D.
ARMAGEDDON WAS JULY 4, 1939
END OF THE WORLD WAS MAR 21, 1843
Skeptical Inquirer

of time so that individuals can communicate specifications of time without ambiguity. Inherent in this process is the fact that nature has not provided convenient or commensurable units of time, so all such schedules are necessarily arbitrary and only approximate the astronomical events to which the days, months, and years correspond. This has caused all calendars to be revised from time to time, with official acceptance based upon utility and convenience rather than correspondence to any cosmic imperative.

What we call a decade, a century, and a millennium represent only units on a calendar to which we have assigned numbers for our own purposes. These periods do not represent or correspond to any natural terrestrial, sidereal, or cosmic phenomena. Such periods are simply artifacts of human invention and convention. Thus, a millennium has no more cosmic significance than an intercalary date, such as February 29. Consequently, it is impossible to make a rational claim that the millennium—or any other calendar date or period—has a determinable cosmic significance or correlate.

There is, however, one cycle that does relate directly to a truly cosmic phenomenon. The solar system is located on the outer fringe of the Milky Way galaxy, which is the astronomical group of stars that includes the sun. The stars in our galaxy revolve around a point that is observed to be the center of the galaxy. Astronomical calculations indicate that the solar system will complete one revolution around the galactic center in some 225 million years. Unfortunately this datum is too large and imprecise to be employed for calendar purposes, but it provides at least a philosophic perspective against which to evaluate the imprecision of our actual calendars.

If the millennium has no cosmic or sidereal basis or importance, then we are left with the question of what its significance is. An answer to this question must begin with the recognition that the current millennium is the first in human history to be established by a widely accepted calendar. Although the Gregorian calendar numbers the years from 1000 to 2000 as the second millennium, in fact the idea of serially numbering the years beyond the reign of a current ruler was not even considered until the latter half of what we now call the first millennium. Such numeration did not become a general practice until about the beginning of the present millennium. Indeed, one of the important early events of our current millennium was development and adoption of the decimal system of numeration itself, which was first established in western Europe early in the thirteenth century.

A significant aspect of the current millennium clearly is that it has encompassed a period of more and greater cultural achievement than any other comparable period. It is impossible even to begin to list the millennium's cultural contributions. They fill multitudes of encyclopedic volumes, covering all fields of science, literature, the arts, philosophy, technology, government, farming, industry, transportation, communication, health care, life expectancy, as well as a host of amenities and conveniences.

Some idea of our cultural progress may be suggested by thinking of the year 999. Our European and African ancestors didn't even know of North and South America. William the Conqueror had not set sail for England. Printing had not been invented. Copernicus had not been born, and the generally accepted view was that the sun and stars revolved around the earth as the moon does. Science in the modern sense did not exist. There were no standard divisions of the day, as mechanical clocks had not yet been invented. The Magna Carta was more than two centuries into the future. None of the countries of Europe or Asia had the boundaries they would have a millennium later. Democracy in the modern sense had not yet been attempted. The decimal system of numeration was not yet established. Although the Julian calendar was widely used in Europe, the beginning of the year was a matter of local option everywhere.

Throughout history people have rejoiced at the termination of each of the many wars that have been waged. In the twentieth century there have been two "world wars," both of which have caused world celebrations, at least by the victors, when their military operations concluded. Late in the nineteenth century the Olympic games were revived with competition from nearly all nations in a series of contests that had some appearance of metaphorical conflicts, which also caused gloating by the victors. The approach to a new millennium is significantly different from all of these occasions.

The last years of the twentieth century are the first in human history in which there has been worldwide recognition that a millennium measured by a universally accepted calendar is about to end and a new one begin. The entire globe is now truly a new world which, whatever its other divisions and disputes, is united by electronic communication, confronting us all with the inescapable knowledge that a period of a thousand years of cultural achievement, interspersed with relapses into primitive barbarism, is coming to an end, and we must now cope with the future that this past millennium has brought to us. The popular attitude is heralded by the *New York Times* headline (July 20, 1996) "With a New Millennium, Some Great Expectations."

The most significant aspect of the transition to the new millennium now appears to be that this is the first time in human history that there has been a simultaneous universal celebration of a wholly peaceful event. This surely warrants the worldwide jubilation that will accompany the end of 1999 and herald the advent of a new calendar millennium.

References

Bynum, W. F., E. J. Brown, and Roy Porter, eds. 1981. *Dictionary of the History of Science*. Princeton, N.J.: Princeton University Press.

Encyclopaedia Britannica, 15th ed. 1993. (The longest and most detailed article on the calendar appears in volume 15, but numerous other articles on relevant topics are in other volumes.)

Grolier Multimedia Encyclopedia (CD-ROM), release 6. Grolier Electronic Publishing. Copyright 1993 by Grolier, Inc.

Microsoft Encarta 95 (CD-ROM). Microsoft Corporation. Copyright 1994 by Funk & Wagnalls Corporation.

Newman, James R., ed. 1967. *Harper Encyclopedia of Science*, rev. ed. New York: Harper & Row.

Parker, Sybil P., ed. 1989. *McGraw-Hill Concise Encyclopedia of Science & Technology*, 2d ed. New York: McGraw-Hill.

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Quantum Quackery

Quantum physics is claimed to support the mystical notion that the mind creates reality. However, an objective reality, with no special role for consciousness, human or cosmic, is consistent with all observations.

VICTOR J. STENGER

Certain interpretations of quantum mechanics, the revolutionary theory developed early in the century to account for the anomalous behavior of light and atoms, are being misconstrued so as to imply that only thoughts are real and that the physical universe is the product of a cosmic mind to which the human mind is linked throughout space and time. This interpretation has provided an ostensibly scientific basis for various mind-over-matter claims, from ESP to alternative medicine. "Quantum mysticism" also forms part of the intellectual backdrop for the postmodern assertion that science has no claim on *objective reality.*

The word "quantum" appears frequently in New Age and modern mystical literature. For example, physician Deepak Chopra (1989) has successfully promoted a notion he calls *quantum healing,* which suggests we can cure all our ills by the application of sufficient mental power.

According to Chopra, this profound conclusion can be drawn from quantum physics, which he says has demon-

Michael Boychuck

strated that "the physical world, including our bodies, is a response of the observer. We create our bodies as we create the experience of our world" (Chopra 1993, 5). Chopra also asserts that "beliefs, thoughts, and emotions create the chemical reactions that uphold life in every cell," and "the world you live in, including the experience of your body, is completely dictated by how you learn to perceive it" (Chopra 1993, 6). Thus illness and aging are an illusion and we can achieve what Chopra calls "ageless body, timeless mind" by the sheer force of consciousness.[1]

Amit Goswami, in *The Self-Aware Universe: How Consciousness Creates the Material World,* argues that the existence of paranormal phenomena is supported by quantum mechanics:

> . . . psychic phenomena, such as distant viewing and out-of-body experiences, are examples of the nonlocal operation of consciousness . . . . Quantum mechanics undergirds such a theory by providing crucial support for the case of nonlocality of consciousness. (Goswami 1993, 136)

Since no convincing, reproducible evidence for psychic phenomena has been found, despite 150 years of effort, this is a flimsy basis indeed for quantum consciousness.[2]

Although mysticism is said to exist in the writings of many of the early century's prominent physicists (Wilber 1984), the current fad of mystical physics began in earnest with the publication in 1975 of Fritjof Capra's *The Tao of Physics* (Capra 1975). There Capra asserted that quantum theory has confirmed the traditional teaching of Eastern mystics: that human consciousness and the universe form an interconnected, irreducible whole. An example:

> To the enlightened man . . . whose consciousness embraces the universe, to him the universe becomes his "body," while the physical body becomes a manifestation of the Universal Mind, his inner vision an expression of the highest reality, and his speech an expression of eternal truth and mantric power
>
> Lama Anagarika Govinda
> *Foundations of Tibetan Mysticism*[3]
> (Capra 1975, 305)

Capra's book was an inspiration for the New Age, and "quantum" became a buzzword used to buttress the trendy, pseudoscientific spirituality that characterizes this movement.[4]

Wave-Particle Duality

Quantum mechanics is thought, even by many physicists, to be suffused with mysteries and paradoxes. Mystics seize upon these to support their views. The source of most of these claims can be traced to the so-called *wave-particle duality* of quantum physics: Physical objects, at the quantum level, seem to possess both local, reductionist particle and nonlocal, holistic wave properties that become manifest depending on whether the position or wavelength of the object is measured.

The two types of properties, wave and particle, are said to be incompatible. Measurement of one quantity will in general affect the value the other quantity will have in a future measurement. Furthermore, the value to be obtained in the future measurement is undetermined; that is, it is unpredictable—although the statistical distribution of an ensemble of similar measurements remains predictable. In this way, quantum mechanics obtains its indeterministic quality, usually expressed in terms of the *Heisenberg uncertainty principle.* In general, the mathematical formalism of quantum mechanics can only predict statistical distributions.[5]

Despite wave-particle duality, the particle picture is maintained in most quantum mechanical applications. Atoms, nuclei, electrons, and quarks are all regarded as particles at some level. At the same time, classical "waves" such as those of light and sound are replaced by localized *photons* and *phonons,* respectively, when quantum effects must be considered.

In conventional quantum mechanics, the wave properties of particles are formally represented by a mathematical quantity called the *wave function,* used to compute the probability that the particle will be found at a particular position. When a measurement is made, and its position is then known with greater accuracy, the wave function is said to "collapse," as illustrated in Figure 1.

Einstein never liked the notion of wave function collapse, calling it a "spooky action at a distance." In Figure 1, a signal would appear to propagate with infinite speed from A to B to

tell the wave function to collapse to zero at B once the particle has been detected at A. Indeed, this signal must propagate at infinite speed throughout the universe since, prior to detection, the electron could in principle have been detected anywhere. This surely violates Einstein's assertion that no signals can move faster than the speed of light.

Although they are usually not so explicit, quantum mystics seem to interpret the wave function as some kind of vibration of a holistic ether that pervades the universe, as "real" as the vibration in air we call a sound wave. Wave function collapse, in their view, happens instantaneously throughout the universe by a willful act of cosmic consciousness.

In their book *The Conscious Universe,* Menas Kafatos and Robert Nadeau identify the wave function with "Being-In-Itself":

> One could then conclude that Being, in its physical analogue at least, had been "revealed" in the wave function. . . . [A]ny sense we have of profound unity with the cosmos . . . could be presumed to correlate with the action of the deterministic wave function . . . . (Kafatos and Nadeau 1990, 124)

Thus they follow Capra in imagining that quantum mechanics unites mind with the universe. But our inner sense of "profound unity with the cosmos" is hardly scientific evidence.

The conventional interpretation of quantum mechanics, promulgated by Bohr and still held by most physicists, says nothing about consciousness. It concerns only what can be measured and what predictions can be made about the statistical distributions of ensembles of future measurements. As noted, the wave function is simply a mathematical object used to calculate probabilities. Mathematical constructs can be as magical as any other figment of the human imagination—like the Starship Enterprise or a Roadrunner cartoon. Nowhere does quantum mechanics imply that real matter or signals travel faster than light. In fact, superluminal signal propagation has been proven to be impossible in any theory consistent with conventional relativity and quantum mechanics (Eberhard and Ross 1989).

Romantic Interpretations

Not everyone has been happy with the conventional interpretation of quantum mechanics, which offers no real explanation for wave function collapse. The desire for consensus on an ontological interpretation of quantum mechanics has led to hundreds of proposals over the years, none gaining even a simple majority of support among physicists or philosophers.

Spurred on by Einstein's insistence that quantum mechanics is an incomplete theory, that "God does not play dice," subquantum theories involving "hidden variables" have been sought that provide for forces that lie below current levels of observation (Bohm and Hiley 1993). While such theories are possible, no evidence has yet been found for subquantum forces. Furthermore, experiments have made it almost certain that any such theory, if deterministic, must involve superluminal connections.[6]

Nevertheless, quantum mystics have greeted the possibility of nonlocal, holistic, hidden variables with the same enthusiasm they show for the conscious wave function. Likewise, they have

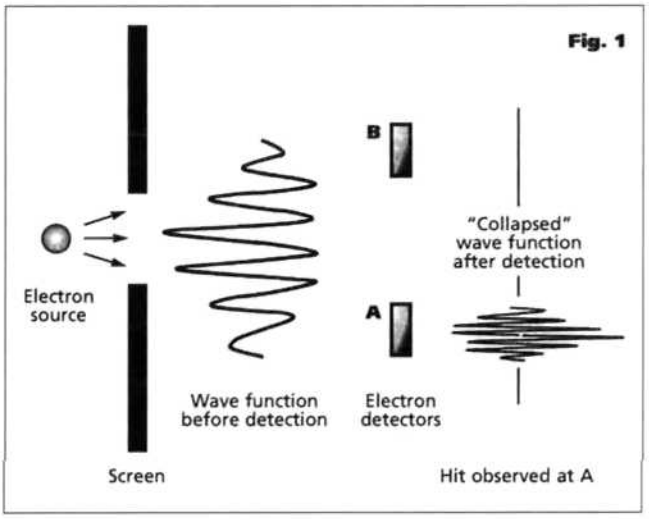

Figure 1. Wave function collapse in conventional quantum mechanics. An electron is localized by passing through an aperture. The probability that it will then be found at a particular position is determined by the wave function illustrated to the right of the aperture. When the electron is then detected at A, the wave function instantaneously collapses so that it is zero at B.

embraced a third view: the *many worlds* interpretation of Hugh Everett (Everett 1957).

Everett usefully showed how it was formally possible to eliminate wave function collapse in a quantum theory of measurement. Everett proposed that all possible paths continue to exist in parallel universes which split off every time a measurement is made. This has left the door open for the quantum mystics to claim that the human mind acts as sort of a "channel selector" for the path that is followed in an individual universe while existing itself in all universes (Squires 1990). Needless to say, the idea of parallel universes has attracted its own circle of enthusiastic proponents, in all universes presumably.

Effective Nonlocality

Admittedly, the quantum world is different from the world of everyday experience that obeys the rules of classical Newtonian mechanics. Something beyond normal common sense and classical physics is necessary to describe the fundamental processes inside atoms and nuclei. In particular, an explanation must be given for the apparent nonlocality, the instantaneous "quantum leap," that typifies the non-commonsensical nature of quantum phenomena.

Despite the oft-heard statement that quantum particles do not follow well-defined paths in space-time, elementary-particle physicists have been utilizing just such a picture for fifty years.

Victor J. Stenger is professor of physics and astronomy at the University of Hawaii and the author of Not By Design: The Origin of the Universe *(Prometheus Books, 1988) and* Physics and Psychics: The Search for a World Beyond the Senses *(Prometheus Books, 1990). This paper is based on his latest book,* The Unconscious Quantum: Metaphysics in Modern Physics and Cosmology *(Prometheus Books, 1995).*

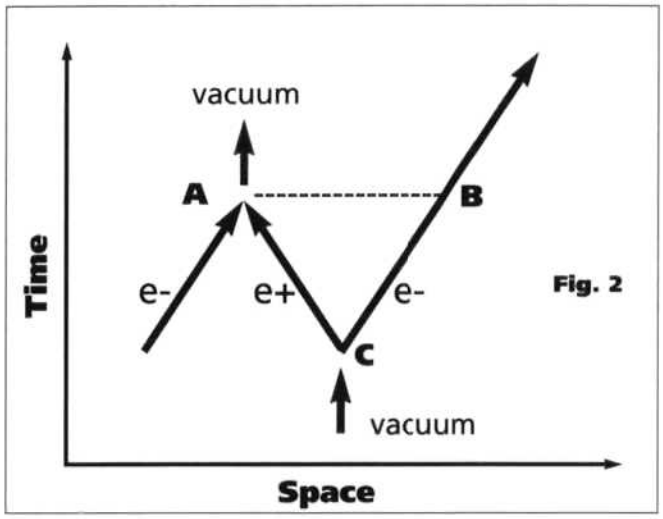

Fig. 2

Figure 2. Effective nonlocality. How an apparent instantaneous "quantum leap" can be made between two points in space. An electron-positron pair is created at C by a quantum fluctuation of the vacuum. The positron annihilates an electron at A, undoing the original vacuum fluctuation so that there is zero net-energy change. The electron thus appears to make an instantaneous quantum leap from A to B. The distance AB is comparable to the wavelength associated with the particle, so "holistic" wave behavior results.

How is this reconciled with the quantum leap that seems to characterize atomic transitions and similar phenomena? We can see how, in the space-time diagram shown in Figure 2.

On the left, an electron (e^-) is moving along a well-defined path. An electron-positron pair ($e^- e^+$) is produced at point C by a quantum fluctuation of the vacuum, allowed by the uncertainty principle. The positron annihilates the original electron at point A while the electron from the pair continues past point B. Since all electrons are indistinguishable, it appears as if the original electron has jumped instantaneously from A to B.

In Figure 2, all the particles involved follow definite paths. None moves faster than the speed of light. Yet what is observed is operationally equivalent to an electron undergoing superluminal motion, disappearing at A and appearing simultaneously at a distant point B. No experiment can be performed in which the electron on the left can be distinguished from the one on the right. A simple calculation shows that the distance AB is of the order of the (de Broglie) wavelength of the particle. In this manner, the "holistic" wave nature of particles can be understood in a manner that requires no superluminal motion and certainly no intervention of human consciousness.

Furthermore, since the quantum jump is random, no signal or other causal effect is superluminally transmitted. On the other hand, a deterministic theory based on subquantum forces or hidden variables is necessarily superluminal.

Thus quantum mechanics, as conventionally practiced, describes quantum leaps without too drastic a quantum leap beyond common sense. Certainly no mystical assertions are justified by any observations concerning quantum processes.

Conclusion

Quantum mechanics, the centerpiece of modern physics, is misinterpreted as implying that the human mind controls reality and that the universe is one connected whole that cannot be understood by the usual reduction to parts. However, no compelling argument or evidence requires that quantum mechanics plays a central role in human consciousness or provides instantaneous, holistic connections across the universe. Modern physics, including quantum mechanics, remains completely materialistic and reductionistic while being consistent with all scientific observations.

The apparent holistic, nonlocal behavior of quantum phenomena, as exemplified by a particle's appearing to be in two places at once, can be understood without discarding the commonsense notion of particles following definite paths in space and time or requiring that signals travel faster than the speed of light.

No superluminal motion or signalling has ever been observed, in agreement with the limit set by the theory of relativity. Furthermore, interpretations of quantum effects need not so uproot classical physics, or common sense, as to render them inoperable on all scales—especially the macroscopic scale on which humans function. Newtonian physics, which successfully describes virtually all macroscopic phenomena, follows smoothly as the many-particle limit of quantum mechanics. And common sense continues to apply on the human scale.

Notes

1. For a review of alternate medicine, including "quantum medicine," see Douglas Stalker and Clark Glymour, eds., *Examining Holistic Medicine* (Amherst, N.Y.: Prometheus Books, 1985).

2. For a fuller discussion and references, see Victor J. Stenger, *Physics and Psychics: The Search for a World Beyond the Senses* (Amherst, N.Y.: Prometheus Books, 1990).

3. L. A. Govinda, *Foundations of Tibetan Mysticism* (New York: Samuel Weiser, 1974), p. 225, as quoted in Capra 1975, p. 305.

4. See, for example, Marilyn Ferguson, *The Aquarian Conspiracy: Personal and Social Transformation in the 1980s* (Los Angeles: Tarcher, 1980).

5. Of course, in some cases those distributions may be highly peaked and thus an outcome can be predicted with high probability, that is, certainty for all practical purposes. In fact, this is precisely what happens in the case of systems of many particles, such as macroscopic objects. These systems then become describable by deterministic classical mechanics as the many-particle limit of quantum mechanics.

6. For a fuller discussion and references, see Victor J. Stenger, *The Unconscious Quantum: Metaphysics in Modern Physics and Cosmology* (Amherst, N.Y. : Prometheus Books, 1995).

References

Bohm D., and B. J. Hiley. 1993. *The Undivided Universe: An Ontological Interpretation of Quantum Mechanics.* London: Routledge.

Capra, Fritjof. 1975. *The Tao of Physics.* Boulder, Colorado: Shambhala.

Chopra, Deepak. 1989. *Quantum Healing: Exploring the Frontiers of Mind/Body Medicine.* New York: Bantam.

———. 1993. *Ageless Body, Timeless Mind: The Quantum Alternative to Growing Old.* New York: Random House.

Eberhard, Phillippe H., and Ronald R. Ross. 1989. Quantum field theory cannot provide faster-than-light communication. *Found. Phys. Lett.* 2: 127–149.

Everett III, Hugh. 1957. "Relative state" formulation of quantum mechanics. *Rev. Mod. Phys.* 29: 454–462.

Goswami, Amit. 1993. *The Self-Aware Universe: How Consciousness Creates the Material World.* New York: G. P. Putnam's Sons.

Kafatos, Menas, and Robert Nadeau. 1990. *The Conscious Universe: Part and Whole in Modern Physical Theory.* New York: Springer-Verlag.

Squires, Euan. 1990. *Conscious Mind in the Physical World.* New York: Adam Hilger.

Wilber, Ken, ed. 1984. *Quantum Questions: Mystical Writings of the World's Great Physicists.* Boulder, Colorado: Shambhala. □

Bias and Error in Children's Nonfiction Books on the Paranormal

An analysis of five children's books claiming to be factual and nonfiction found that 85.2 percent of the passages either explicitly confirmed certain events as paranormal, failed to present alternative explanations, or dismissed such explanations as implausible.

RICHARD WISEMAN and CLIVE JEFFREYS

Children are fascinated with the paranormal. They enjoy being frightened by ghost stories, are intrigued with the notion of magical powers, and delight in fantastic tales of mythical worlds inhabited by elves, fairies and goblins. With their curiosity fired, they are eager to know if ghosts *really* exist, if people *really* are psychic, or whether science *really* is unable to explain "supernatural" happenings.

No child would be disappointed by a visit to their local bookshop or library in search of material on the paranormal. A trip to my local bookstore yielded five of the most popular children's titles: *Puffin Factfinders: The Supernatural; Unsolved Mysteries Project Book; The Usborne Book of the Haunted World; The Usborne Guide to the Supernatural World;* and *The Usborne World of the Unknown: Ghosts* (hereafter referred to as *The Supernatural, Unsolved Mysteries Project Book, The Haunted World, The Supernatural World,*

and *Ghosts,* respectively).

All of these books claim to be factual and were shelved in the nonfiction section of the bookshop. The books cover a huge range of material including psychic powers, hauntings, UFOs, the Bermuda Triangle, and Bigfoot. But do they present a child with anything approaching a balanced view of the paranormal? To find an answer, two topics that were common to all were analyzed—psychic abilities and ghosts.

As with most children's books, the text was neatly broken into easily digested passages, and each passage could be placed into one of three groups.

First, some passages presented a "pro-paranormal" viewpoint by suggesting that genuine paranormal phenomena actually existed. Support was either explicit—for example, *The Haunted World* notes, "Ghosts often have a good reason to haunt people. Some have an urgent message or warning to deliver"—or implicit, with passages failing to mention possible normal explanations or mentioning such explanations but dismissing them as implausible (e.g., relating a poltergeist case without mentioning the possibility of hoaxing).

Second, there were passages that presented a more "balanced" view by outlining potentially normal explanations for "paranormal" phenomena but not stating whether these explanations were actually proven. Mentioning that a certain psychic *might* be fraudulent but without stating whether he or she had *actually* been caught cheating was an example of this in *The Haunted World.*

Finally, a third type of passage presented an "antiparanormal" view by explicitly noting that a supposedly paranormal phenomenon had a normal explanation. Ghostly noises in a "haunted" house that turned out to be caused by scurrying mice is a case in point.

Table 1 presents the number and percentage of the three types of passages in each book.[1] It clearly illustrates that the books presented a pro-paranormal viewpoint. Overall, 85.2 percent of the books' passages either explicitly confirmed certain events as paranormal, failed to present alternative explanations for such phenomena, or mentioned such explanations but dismissed them as implausible. *Ghosts,* the book that displayed the smallest amount of bias, still contained 64 percent pro-paranormal passages, although it did at least outline how scientific methods could be used to investigate hauntings and clearly detailed three cases where normal explanations were shown to account for "paranormal" phenomena.

An even more worrying aspect of the analysis was the discovery of some appalling errors in some of the "pro-paranormal" passages.

For example, both *The Supernatural World* and the *Unsolved Mysteries Project Book* describe the ghostly phenomena associated with Borely Rectory (labeled "the most haunted house in Britain") and in particular the "poltergeist" activity reported by 1930s investigator Harry Price. No mention is made of the fact that it is widely believed that Price faked much of his investigation and report (Dingwall, Goldney, and Hall 1956).

The Supernatural World describes how one scientist, Cleve Backster, wired plants to a lie detector and discovered that the act of his thinking about burning the leaves of the plants caused the detector to show a large response. The book concludes, "Plants seem to recognize a killer." The section doesn't mention that other scientists failed to replicate Backster's findings, nor does it mention that they suggested Backster was using inappropriate techniques to record levels of the electrical activity in leaves (Horowitz, Lewis, and Gasteiger 1975; Kmetz 1977).

On a worse note, some of the books endorsed "paranormal" events that are *known* to have normal explanations. *The Haunted World* contains a photograph of an Indian fakir appearing to float above the ground. The caption reads, "Apparently Subbayar Pullavar levitated for four minutes in 1936." In fact, the fakir is clearly performing a simple, and well-documented, magic trick in which the performer is connected to a harness under his clothing and supported by one end of a cloth-covered pole (see, e.g., Waters 1988). A few pages later the book presents a photograph of the medium Carlos Mirabelli apparently levitating. The caption reads, "This photograph claims to prove that Mirabelli could levitate." The photograph is a known fake. Research has shown that the photograph has been extensively retouched to remove the object (probably a ladder) that Mirabelli was standing on at the time of the "levitation" (Playfair 1992)!

Likewise, *The Supernatural World* reproduces various "Kirlian" photographs, stating that "Kirlian pictures seem to show that all living things and some inanimate objects have a twinkling aura that constantly surrounds them." In fact, several scientists have demonstrated that such photographs are simply recording the discharge produced when a high-frequency voltage is applied to a grounded object (see, e.g., Watkins and Bickel 1986). These photographs have a perfectly natural explanation, and *The Supernatural World* is wrong to conclude that they may "help us understand psychokinesis and psychic healing."

Children's enthusiasm for the paranormal presents educators with an excellent opportunity to teach them about many different aspects of science. Children's critical thinking skills could be enhanced by their having to consider alternative explanations for supposedly paranormal events, and they could be encouraged to think about the types of investigations needed to evaluate these explanations. Some of the principles involved in evaluating evidence could be illustrated, including, for example, the problems of assessing eyewitness testimony and the way in which books and other media sometimes distort information.

Could not a really well designed book invite children to play the part of a "paranormal investigator," analogous to some currently available children's "detective" books? If books can present readers with clues relating to a fictional crime and ask them to play the role of detective, then children could surely

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Book	Total number of passages	Number (and percentage) of "pro-paranormal" passages	Number (and percentage) of "balanced" passages	Number (and percentage) of "anti-paranormal" passages
The Supernatural	60	55 (91.6%)	3 (5%)	2 (3.4%)
Unsolved Mysteries Project Book	30	25 (83.3%)	4 (13.3%)	1 (3.4%)
The Haunted World	99	90 (90.9%)	7 (7%)	2 (2.1%)
The Supernatural World	177	158 (89.2%)	10 (5.6%)	9 (5.2%)
Ghosts	75	48 (64%)	11 (14.6%)	16 (21.4%)
TOTAL	**441**	**376 (85.2%)**	**35 (7.9%)**	**30 (6.8%)**

Table 1: Number (and percentage) of "pro-paranormal," "balanced," and "anti-paranormal" passages in each of the books examined.

be presented with evidence relating to "paranormal" events and be asked to try to solve the mystery.

It is a great pity that none of the books examined fulfilled this potential. Indeed, rather than informing or exciting their readers about science, the books more or less promoted the notion that "supernatural" events demonstrate the limitations of a scientific approach. Often this argument was supported by incorrectly describing instances where scientists and investigators had apparently been unable to explain "paranormal" phenomena. Both *The Supernatural World* and *The Supernatural* refer to the paranormal powers of Ted Serios, a "psychic" who claimed to project mental images onto photographic film. The first book states, "Neither Ted Serios, nor the scientists who have tested him, have any explanation of how the power of thought is able to affect photographic film," while the second book notes, "Experts are unable to explain the strange pictures created by psychic photography." Neither book notes that skeptics have suggested various ways in which Serios might have faked his demonstrations (see, e.g., Eisendrath and Reynolds 1967; Randi 1987).

The Haunted World contains a brief account of Harry Houdini's investigation of the medium Mina Crandon ("Margery"). The book notes that Houdini locked Crandon in a box to prevent her from cheating during test séances. Apparently, "As the séance began the box burst open. Margery said 'Walter' [her 'spirit control'] was very angry. When she was shut into it again, something inside shook and banged so much that the experiment had to be abandoned. Houdini was left frustrated." No mention is made of the fact that Crandon failed to produce any convincing phenomena during Houdini's test séances or that later evidence strongly suggested that she was a fraud (see, e.g., Tietz 1973).

All of the books examined present themselves as being factual and may be the first source of information on the subject encountered by young, inquisitive, and impressionable minds. The analysis undertaken suggests that, at best, they badly misinform their readers.

Publishers would surely shy away from producing a children's history or science text that was obviously biased and full of errors. It is unfortunate that they feel it is acceptable to do so when publishing books on the paranormal.

Note

1. Most books also contained "neutral" passages which might, for example, pose a question (e.g., "Does psychic ability really exist?") or discuss individuals' beliefs concerning the paranormal but not discuss the possible reality of such phenomena. These passages are excluded from the present analysis.

Books Reviewed

Puffin Factfinders: The Supernatural, by John Day, published by Puffin Books, 1995, 32 pp.

Unsolved Mysteries Project Book, by Steve Barlow and Steve Skidmore, published by Headway Books, Hodder and Stoughton, 1993, 32 pp.

The Usborne Book of the Haunted World, by Caroline Young, published by Usborne Books, 1995, 48 pp.

The Usborne Guide to the Supernatural World, by Eric Maple, Eliot Humberstone, and Lynn Myring, published by Usborne Books, 1990, 192 pp.

The Usborne World of the Unknown: Ghosts, by Christopher Maynard, published by Usborne Books, 1990, 32 pp.

References

Dingwall, E., K. Goldney, and T. Hall. 1956. *The Haunting of Borely Rectory.* London: Duckworth.

Eisendrath, D. B., and C. Reynolds. 1967. An amazing weekend with the amazing Ted Serios. *Popular Photography,* October 1967, 82–158.

Horowitz, K. A., D. C. Lewis, and E. L. Gasteiger. 1975. Plant primary perception. *Science* 189: 478–480.

Kmetz, J. M. 1977. A study of primary perception in plants and animal life. *Journal of the American Society for Psychical Research* 71(2): 157–170.

Playfair, G. L. 1992. Mirabelli and the phantom ladder. *Journal of the Society for Psychical Research* 58(826): 201–203.

Randi, J. 1987. *Flim-Flam.* Buffalo, N.Y.: Prometheus Books.

Tietz, T. R. 1973. *Margery.* New York: Harper & Row.

Waters, T. A. 1988. *The Encyclopedia of Magic and Magicians.* New York: Facts On File Publications.

Watkins, A. J., and W. S. Bickel. 1986. A study of the Kirlian effect. SKEPTICAL INQUIRER 10(3): 244–257. □

The Mysterious Placebo

One of the most significant but widely misunderstood phenomena is the placebo effect. Research shows that the placebo effect can be greater and is far more ubiquitous than commonly thought.

If it was so, it might be; and if it were so, it would be; but as it isn't, it ain't.
—Tweedledee, in Lewis Carroll's *Through the Looking Glass*

JOHN E. DODES

One of the questions that skeptics are asked most persistently is to explain how acupuncture, homeopathy, faith healing, Qigong, and other treatments work. Skeptics often use the *placebo effect*—a response to the *act* of being treated, not to the treatment itself—as an answer, but usually to no avail. I believe that's because most people, both logical and fuzzy thinkers, don't truly understand what the placebo effect is.

Spontaneous remission and the placebo effect, which are known as *nonspecific effects,* are significant phenomena that have great impact on consumers and health-care professionals. Recovery from illness, whether it follows self-medication, legitimate treatment, or avant-garde therapies, may lead one to conclude that the treatment received was the cause of the return to good health.

A common saying is that if you treat a cold it will last a

week, but if you leave it alone it will be gone in seven days. Even serious diseases have periods of exacerbation and remission; arthritis and multiple sclerosis are prime examples. There are even cases of cancers inexplicably disappearing. The major logical error in plotting disease progress is: *post hoc, ergo propter hoc* ("after it, therefore, because of it"). This common fallacy credits improvement to a specific treatment just because the improvement followed the treatment.

H. K. Beecher's seminal paper "The Powerful Placebo" (Beecher 1955) is among the most frequently cited and was undoubtedly responsible for the double-blind study design having been adopted as the universal standard. Beecher reported on twenty-six studies and arrived at an *average* placebo response rate of 32.5 percent. From this figure comes the often cited statement that a fixed fraction (one-third) of the population responds to placebos. But this is a myth. A recent paper (Roberts et al. 1993) concluded that "under conditions of heightened expectations, the power of nonspecific effects (placebos) far exceeds that commonly reported in the literature."

The paper, "The Power of Nonspecific Effects in Healing," is fascinating. The authors analyzed data for treatments that met the following criteria: (*a*) strong positive reports by at least two groups of investigators; (*b*) at least one well-controlled negative report; (*c*) the treatment had been abandoned as ineffective; and (*d*) data from a major portion of the positive studies were presented in a manner that permitted reliable classification into categories of excellent, good, or poor outcomes. The treatments that were studied included: glomectomy (the surgical removal of a small, normal mass of tissue called the carotid body that is found on the carotid artery) for the treatment of asthma; levamisole (an immunomodulatory drug) for the treatment of Herpes Simplex Virus (HSV); organic solvents (ethyl ether and chloroform), also for HSV; and gastric freezing for duodenal ulcers. In all the cases the doctors and the patients expected the treatments to work. The results for all the positive studies combined showed an excellent or good outcome in 69.8 percent of the almost seven thousand cases studied. These results led to the conclusion that a treatment outcome "is always due to some interactive combination of specific and nonspecific effects."

Research also illustrates how difficult it is to separate valid treatments from *apparently valid* ones. In other words, we're never without some level of nonspecific effects.

A number of other myths are associated with placebos. Try to answer the following questions: Does a positive response to a placebo mean the patient's problem is imaginary? Does a patient have to believe in the therapy for a placebo effect to occur? Are placebos harmless?

The answer to all three questions is no. Placebo responses can occur in patients with real disorders; the subjective symptoms can resolve while the objective ones remain. Belief in the treatment only appears to explain a portion of the placebo effect (Jarvis 1990). It appears that belief, operant conditioning, and suggestibility all play important roles. In an interesting experiment, a man experienced pain and exhibited marked depression of a specific part of his heartbeat while being monitored by an electrocardiogram (ECG) machine during a treadmill diagnostic test. This occurred at a treadmill setting of 44. For a second test, when the treadmill number was miscounted so that the patient exercised less, he exhibited the same pain and ECG depression as at the setting of 44 (Jarvis 1990). This dramatically demonstrates the power of suggestion.

Contrary to popular belief, placebos can be harmful. Placebo responses can "teach" chronic illness by confirming and/or reinforcing the delusion of imagined disease (Jarvis 1990). Patients can become dependent on nonscientific practitioners who employ placebo therapies. Such patients may be led to believe they're suffering from imagined "reactive" hypoglycemia, nonexistent allergies and yeast infections, dental filling amalgam "toxicity," or that they're under the power of Qi or extraterrestrials. And patients can be led to believe that diseases are only amenable to a specific type of treatment from a specific practitioner. On the other hand, the practitioner can also be blinded to the real disease because of being convinced that the patient's condition is only imagined. Jarvis (1990) reminds us that "for both patient and practitioner to be blind to the clinical realities is an unacceptable version of the 'double-blind.'"

The use of placebos can undermine the doctor-patient relationship by requiring deception on the part of the caregiver. Consumer advocate Stephen Barrett has explicit reservations concerning overreliance on the placebo effect in clinical practice: "I am against people being misled. The quack who relies on a placebo effect is also pretending he knows what he is doing—that he can tell what is wrong with you and that he has effective treatment for just about everything . . . he is encouraging people to form lifelong habits of using things they don't need" (Barrett 1977).

In addition, placebos "need not always be beneficial and may be frankly toxic: dermatitis medicamentosa and angioneurotic edema (allergic-type reactions) have resulted from placebo therapy. More subtle but equally important negative placebo effects must occur when the physician by virtue of a moment of inattention, a raised eyebrow, or a transient look of disgust, loses the trust of his patient" (Bourne 1991).

Paracelsus (Swiss alchemist and physician 1493–1541) wrote: "You must know that the will is a powerful adjuvant of medicine." It is imperative that skeptics recognize the wisdom and warnings inherent in this statement.

John E. Dodes is the president of the New York Chapter of the National Council Against Health Fraud, and the only dentist on the New York State Department of Health's Health Fraud Advisory Board. His new consumer book, The Whole Tooth, *written with Dr. Marvin Schissel, is to be published by St. Martin's Press in 1997.*

References

Barrett, S. 1977. Health frauds and quackery. *FDA Consumer* 11:12–17.

Beecher, H. K. 1955. The powerful placebo. *JADA* 159:1602–1606.

Bourne, H. 1991. Unrecognized therapeutic measures, including placebo. In *Clinical Pharmacology,* ed. by K. L. Melmon and H. F. Morrelli. New York: Macmillan.

Jarvis, W. T. 1990. Dubious dentistry: A dental continuing education course. Loma Linda University, Loma Linda, Calif.

Roberts, A. H., D. G. Kewman, L. Mercier, and M. Hovell. 1993. The power of nonspecific effects in healing: Implications for psychosocial and biological treatments. *Clinical Psychology Review* 13:375–391. □

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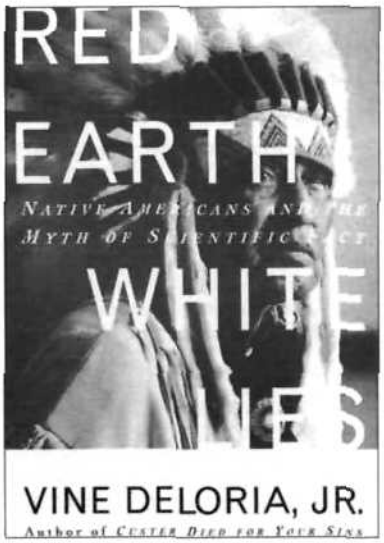
Red Power Finds Creationism

JOHN C. WHITTAKER

Red Earth, White Lies: Native Americans and the Myth of Scientific Fact. By Vine Deloria Jr. Scribner, New York, 1995. ISBN 0-684-80700-9. 286 pp. Hardcover, $23.

When I was a student, I admired Vine Deloria Jr.'s polemical history *Custer Died for Your Sins,* and I feel a personal sense of grievance now because his most recent book, *Red Earth, White Lies: Native Americans and the Myth of Scientific Fact,* is so bad that I no longer feel I can trust anything he has written.

Sometimes when creationists shout to have their religious beliefs about the origins of the world taught in public schools as science, I want to ask them why they think the Bible version is a better choice than the Buddhist, or Hopi, or Zulu, or Sioux creation stories. Of course, it isn't, because all origin myths and other pieces of religious writings and oral traditions have, as their most important meaning, moral lessons about the relationships between humans, god or gods, and the universe. While they may, like parts of the Bible, reflect some real past events, they are rarely accurate guides to geology or history. Attempts to fit what we know about the past into any of dozens of different religious traditions resembles Cinderella's sisters' trying to wear her shoes: the result is dishonest mutilation of science, degradation and misinterpretation of great literature and moral wisdom, and hurtful bigotry toward other people. Vine Deloria Jr. has provided new proof of this in a wretched piece of Native American creationist claptrap that has all the flaws of the Biblical creationists he disdains.



Deloria is known as a skillful polemicist, and his fluent and occasionally witty writing is the only thing to recommend *Red Earth, White Lies.* His basic theme is that science is flawed, and native traditions offer a better way to understand the world. Specifically, the current scientific views of New World prehistory are all wrong and racist.

Deloria begins by explaining that when science dismissed Biblical literalism, other religious traditions were condemned as even less accurate. In chapter 3, he argues that the basis of modern science is evolution. His account of the racist uses of evolutionary theory is not too inaccurate, but his assumption that they still dominate science is. In any case, according to Deloria evolution is a flawed concept because there are no transitional fossils, and there are numerous "anomalies" that disprove the accepted sequence of human evolution.

In chapter 4, the idea of Pleistocene "Ice Ages" is made to seem implausible with some silly stories about the migrations of bison ("Mr. Bison"), selective citing of outdated evidence, and mixing of geological periods separated by millions of years. Archaeologists agree that the first humans in the New World, who crossed the Bering Strait "land bridge" from Asia to North America about 12,000 years ago, were the ancestors of modern Native Americans. This well-supported theory is not good enough for Deloria, who claims it is a fiction created to suggest that the Indians were latecomers to the New World and thus could be legitimately cheated out of their land. Deloria seems to feel that a religious fiction of "we were always here" provides more authority to Native American land claims.

In chapter 6, Deloria attacks the theory that the first migrants to the Americas (the ancestral Native Americans) caused the extinction of the mammoths and other Pleistocene megafauna. To him this is another denigration of native respect for the environment and justification for ongoing destruction. Some of his attacks on the theory and evidence for "Pleistocene overkill" are legitimate, and despite his claim that it is uncritically accepted, others have raised similar concerns, if less scathingly. Unfortunately, he

prefers to believe that the megafauna perished in catastrophes so recent that vague Native American traditions can be claimed as *memories* of mammoths and saber-toothed cats. Chapters 6 and 7 are devoted to supporting this thesis with nineteenth-century accounts and a blissful ignorance of geology.

Not only were there large animals in the past, but people were larger too. Deloria takes traditions of "giants" or "tall ones" to refer (p. 167) to Pleistocene Americans, possibly Sasquatch, but more likely "the white-skinned race which forced the Salish, Sioux, and Algonkians out of the north country and then . . . migrated east and invaded western Europe, routed the Neanderthals, and are known as the Cro-Magnon peoples." Pleistocene animals and humans were extra-large, according to Deloria, because of higher percentages of CO_2 in the atmosphere, and both Native American and Biblical traditions remember these "giants" who had life spans of up to one thousand years until a "dump of cometary water" changed the atmosphere and initiated Deloria's quick-step ice age.

Chapters 7 and 8 are devoted to "correcting" geology by uncritical reference to native traditions, intentional blindness to basic geology, and loony "commonsense" arguments. For instance, geology does not, as he claims, proceed by first identifying index fossils, arranging them in an evolutionary order of simple to complex, claiming that geological strata are then in order, and finally using this to show that evolution took place. The geological sequence and the ordering of the fossil evidence depends on literally thousands of instances where a sequence of many layers, with consistent species of plants and animals, are deposited one on top of another *in a single location.*

Contrary to Deloria's claims, most anthropologists would agree that some oral traditions may reflect historical events, even recent geological events like the volcanic eruptions he discusses at length. Whether they actually do so must be judged on whether they plausibly fit the evidence, not by discarding the evidence when it contradicts the stories. A Hopi tradition of the eruption of Sunset Crater near Flagstaff, Arizona, (well dated from 1064 and perhaps continuing into the 1200s) is quite plausible and widely accepted by archaeologists, but to fit other possible eruption traditions to the most interesting mountains in their regions, Deloria is willing to discard atomic dating and vast bodies of geological evidence of the prehuman antiquity of the mountains.

In the final chapter, Deloria identifies areas where good research "will force open any breaches I have identified in the wall of scientific orthodoxy." Actually, while he has pretended to scholarly analysis in the preceding chapters, here he whips up the runaway horses of his imagination. Although "the majority of stories of origin suggest a creation in which people are given an awareness that they have been created"—which, by Deloria's logic, implies that the creation story must be true—he remains vague about creation. Perhaps he does not want to specify whether the first people fell from a land above the sky or migrated up from several levels of worlds beneath this current one, to mention only two of the many traditions.

Once living beings were created, he contends, there was a golden age that people remember in their traditions as having very different geological conditions from the present, with no rivers or normal meteorological phenomena, and a mist covering the earth. This world was destroyed by fire, that is, volcanism, but "higher spiritual entities warned enough people" to repopulate the earth. The volcanism was triggered by a blanket of extraterrestrial matter that produced what geologists think are sedimentary layers. He says "living fossil" species prove that the earth really has a very short history and tribal traditions even remember dinosaurs. The different climate with high CO_2 means that carbon 14 cannot be used for dating, and just like Biblical creationists, he cites some obviously incorrect radiocarbon dates, ignoring literally tens of thousands that fit expected sequences or can be tested against historical evidence. This is like saying that internal combustion engines are impossible just because your car does not start on a cold morning. But no matter what Deloria has to do to the evidence, he will do it, because "regardless of how many religious trappings have been attached to introduce lessons of morality, these [creation myths] are basically geological reports." He finishes with a final swish at archaeology, dismissing the idea that artifact styles changed slowly over thousands of years in favor of a vague, short prehistory where everyone lived together. Archaeologists have no accurate means of dating, he says, and can't tell the difference between prehistoric peoples anyway. This seems a poor position to take for his political goals, since if archaeology cannot provide the evidence of long native occupation of America, what is to prevent other crackpots from claiming that Columbus brought all the Indians with him in 1492, or that they are really Jews who fled the tower of Babel?

Deloria's style is drearily familiar to anyone who has read the Biblical creationist literature. At the core is a wishful attempt to discredit all science because some facts clash with belief systems. A few points will suffice to show how similar Deloria is to outspoken creationist author Duane Gish or any of his ilk.

1. Creationists of all stripes start with a religious story and either interpret the story to fit the geological facts or dismiss or ignore the facts because they do not fit the story. Deloria cites a Salish account (p. 98) that claims they were driven by other people from the north where there were ice mountains and strange animals. According to him, this may be a memory of glacial conditions, although it may seem rather vague to the unbiased reader.

2. The contradictions in religious traditions are ignored. Deloria has a worse problem than even Biblical literalists: there are dozens of completely different

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Native American creation myths. But Deloria is not worried because "each tribe had its own special relationship to the superior spiritual forces which governed the universe . . . . Tribal knowledge was therefore not fragmented and was valid within the historical and geographical scope of the people's experience" (p. 51). Deloria throughout weighs oral traditions with his thumb on the scale. He argues that if lots of different American Indian tribes have similar long-standing beliefs, they must reflect geological reality, but I am pretty sure he would be (rightly) skeptical about the reality of a hot place for unbelievers that is a widespread and ancient tradition among Christian sects.

3. Creationists reason that if scientists disagree, they must all be wrong. With little evidence on their side, creationists like to cite errors and arguments in science to show not just that some theories are to be doubted, but that scientists are really dumb. To carry this out, it helps if you use outdated information and ignore recent consensus in favor of antique controversy. Deloria constantly uses outmoded ideas of human evolution (e.g., "Neanderthals evolved into Cro-Magnons") as if they were current. He frequently cites information such as early dates that have been dismissed by later work, claiming for instance that the Calaveras skull dates from the Pliocene epoch and thus "calls into question the geological time scale itself." Of course, it was found in the 1860s by miners, and it was obvious long ago that any association it may have had with ancient deposits was a result of disturbance rather than great age. A recent radiocarbon date on the skull itself shows that it is only about 740 years old. His misinterpretations of the Bering Strait land bridge and Pleistocene geology are based on sources from the 1940s to the 1960s; thus he ignores more than thirty years of productive research. Of course, if he were to find that we still do not know everything or agree on all points today, he would feel equally vindicated. Meanwhile, he prefers to rely on pseudoscientific ideas like "dumps of cometary water," borrowed from Velikovsky's attempts to explain all of history and geology as the result of the earth's encounters with comets.

4. Creationists suffer from a lack of knowledge, often willful, of basic science. Dinosaur and mammoth bones on top of the ground do not mean they died yesterday, but that they were exposed by recent erosion. You cannot dismiss an earth history of millions of years, or a Native American prehistory of about twelve thousand years, unless you dismiss literally thousands of dates based on tree rings and atomic decay. If you dismiss those, you have to deny much of biology and physics; and anyone who eats apples, drives gasoline-powered cars, or uses electricity from nuclear reactors ought to concede that the principles of biology, geology, and physics are well founded and at least partly understood. Deloria does not like the idea of long, slow, ancient ice ages, so he suggests instead "cometary water dumps" or that the solar system might have "suddenly traveled through an area of intense cold in space," as if interstellar space was like the water in a swimming pool. The glacial processes of ice movement that Deloria sneers at are well documented in modern glaciers.

5. Most crackpots believe there is a scientific conspiracy to conceal the truth and suppress brilliant dissenters like themselves. Deloria has a couple of unsupported stories about the persecutions of people who have countered orthodox science. This makes me feel a bit better about writing a harsh review: whatever I say, Deloria and his supporters will not be hurt because I am just another academic trying to defend the status quo, namely politically and racially motivated theories that disadvantage Native Americans. According to Deloria (p. 41), we scientists even consider it permissible to maintain our status by lies because "the most fatal counterattack against entrenched authority will not be directed against their facts, but against their status." In making this claim about scientists, Deloria has described his own plan in a nutshell. He is willing to write a piece of dishonest scholarship because by attacking scientific authority, he thinks he can further his political goals. He doesn't consider this kind of thing very honorable when scientists do it, but it seems to be OK for him.

As an archaeologist, I found Deloria's unjustified hatred painful. If I have a political motivation in teaching American prehistory, it is to make the point that native cultures were and are as human, important, interesting, and worthy of understanding as the ancient Greeks, the Biblical Jews, and the historic colonists. Whatever its flaws, good archaeology has consistently fought racism and spoken out for diversity, preservation, and common humanity. It was archaeology that showed that Native Americans had an ancient history here and that their achievements were their own, not borrowed from "higher" civilizations of the Middle East or Europe. Sad to say, many of the creationist and crackpot theories of prehistory are subtly or openly racist, which is one reason archaeologists ought to confront them. As Deloria points out, the Biblical version of creation was interpreted to favor Western Christian cultures and even at times to relegate others to nonhuman status. Christianity and its followers received legal protection denied to native religions because Christianity was "real" religion and others were not.

While Deloria rightly condemns racist stereotypes of Native American culture, he is quite willing to say things like: "Religion . . . ceased to exist in America long ago. Indeed, any higher deity exists for Americans only insofar as he or she can guarantee great sex, lots of money, social prestige, a winning football team, and someone to hate." Science, according to Deloria, is also morally bankrupt, and all scientists are fools, tools, and conformists. In contrast, Indians are spiritually honest and in touch with the universe in ways other Americans cannot understand; their spiritual leaders can control weather, predict the future, and heal the sick. Some political activists and the New Age

Indian wanna-bes will eat this up and wallow happily in the drainage ditch of antiscience, but unfortunately, Deloria's reputation will also attract less biased readers who deserve an honest account of American prehistory. Contrary to Deloria's complaint that he cannot find any coherent or believable explanations of current theories of the peopling of the new world, Brian Fagan's *Ancient North America* (Thames and Hudson 1995) and *The Great Journey* (Thames and Hudson 1987) are two of several readable and well-documented books.

Both the great achievements of Native Americans and the sorry record of United States dealings with them should be widely and honestly taught. I would like to think that eventually enough justice will be done that modern Native Americans will no longer feel themselves a victimized minority, and an articulate leader like Deloria will not feel the need to put his best foot forward into a cow pie of politically motivated, false prehistory. □

An Encounter with the Man from the Ministry

CHRISTOPHER C. FRENCH

Open Skies, Closed Minds: For the First Time a Government UFO Expert Speaks Out. By Nick Pope. Simon & Schuster, London, 1996. 270 pp. Cloth £14.99

Recently, in the United Kingdom, another book was published on UFOs. However, according to the media hype, this was not *just* another book about UFOs. According to an official press release, this book "blows the lid off the British Government's UFO secrets by exposing *for the first time* what they *really* know." And who should be in a better position to write such a book than Nick Pope, the man who from 1991 to 1994 was responsible for investigating and analyzing claims of UFO sightings for the British Ministry of Defence?

During this period, Pope worked for Secretariat (Air Staff) Department 2A—"The UFO Desk." Apparently, although he started out as a skeptic, he was forced by the sheer weight of evidence to acknowledge that extraterrestrial spacecraft really are routinely breaching the United Kingdom's air defences and that they represent a major potential threat to national security. In his new book, *Open Skies, Closed Minds,* he presents the apparently "irrefutable evidence" that has led him to this conclusion. It was therefore with great anticipation that I opened Pope's book a few days ago and began to read. My hands trembled as I turned the pages. The truth was about to be revealed. At last, a glimpse into the real *X-Files* . . . .

Okay, so I am exaggerating slightly. I had already been told by a friend who had read the serialization in a British daily newspaper that it was "just the same old stuff" as all the other books on UFOs. However, I had been approached by the producer of a TV talk show to provide a skeptical perspective on UFO claims for a program they were doing focusing on Pope's book, so I felt duty-bound to read it. As it turned out, my friend's description was totally accurate. I searched in vain for the "irrefutable evidence" that had been promised. What I found instead was a presentation of some of the classic UFO cases, plus some of Pope's own rather less impressive cases.

The book does actually give some real insight into the British government's approach to UFOs but not quite in the way that the book's publicity might lead one to expect. In the TV series *The X-Files,* the fictional Fox Mulder is often prevented from getting too close to the truth regarding UFOs by sinister government agents. It is widely believed by the UFOlogical community that the world's governments and military powers are all too aware of the reality of extraterrestrial visitors, and that they are engaged in a vast coverup to keep this knowledge from the public. UFOlogist Timothy Good is the main proponent of such a conspiracy theory in the United Kingdom, and he has written the foreword for Pope's book. A natural choice, it would appear.

There is only one snag. Pope, the man billed as "the real Fox Mulder," is convinced that the British government is not engaged in any kind of coverup. Far from it being the case that the government has vast amounts of detailed information on UFO technology, Pope is worried that the Ministry of Defence is so ignorant about "a phenomenon which is as real as toast." Good's foreword, therefore, argues that although Pope may be being honest about his lack of knowledge of a coverup, there is one anyway. If Good is right, then Pope is merely a pawn being controlled by unseen forces within the Ministry of Defence. If that is the case, why should we be expected to treat his revelations as any kind of a reliable guide to the UFO phenomenon?

Personally, I suspect that Pope is giving us an accurate account of just how seriously the British government takes the UFO threat. Contrary to the views of the conspiracy theorists, vast resources are not put into a sophisticated coverup operation. The job of dealing with UFO claims is allocated to a single person—and even that person has other unrelated duties! One part-time civil servant who has subsequently published a book on his activities and yet is still working for the Ministry of Defence is not really the stuff of elaborate conspiracy theories.

Interestingly, Pope seems to imply that the American government *is* engaged in a coverup. Many of the cases that he finds

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so impressive, in particular the notorious Roswell crashed-saucer claim, rely upon such a clandestine operation for them to be taken seriously at all. It is claimed that in 1947 a flying saucer crashed in Roswell, New Mexico, and that the debris, including alien bodies, was recovered by the military. The United States Air Force denies such claims, saying that the debris found was from a balloon being used in a then-top-secret military project known as Mogul and that no alien bodies were whisked away for autopsy. It follows that if a saucer really did crash, the United States government must be engaged in a coverup. What Pope never explains is why the Americans would feel it necessary to engage in a sophisticated, large-scale coverup while the British government is quite happy to virtually ignore the UFO phenomenon altogether. As with many of Pope's claims, his argument here just does not hold up. Skeptics feel that the reason conspiracy theories are so popular among UFOlogists is that they provide an excellent means of explaining the fact that no really convincing evidence exists.

Pope's three immediate superiors at the Ministry of Defence were not as impressed as Pope with the evidence he collected for the reality of UFOs. Their attitudes ranged "from complete scepticism to a more open-minded position." Note that for Pope, being open-minded equals believing that UFOs are of extraterrestrial origin, and being closed-minded equals doubting this opinion. For example, we are told that those involved in Project Blue Book, a major investigation into UFO claims set up by the United States Air Force in 1952, became less and less "open-minded" as their investigations progressed. It seems very odd, to say the least, that an initially open-minded project team would become more closed-minded the more information they gathered. Needless to say, Project Blue Book concluded by stating that no evidence had been found to support the extraterrestrial origin of UFOs.

Project Blue Book, along with other similar investigations, found that well over 90 percent of UFO sightings can be explained in fairly prosaic terms. Pope accepts that the vast majority of sightings can be accounted for in terms of astronomical events (especially the bright planet Venus), aircraft, satellites, weather balloons, and so on. Like other UFOlogists, however, he is tremendously excited about the few cases that cannot be accounted for. With respect to several cases he presents, he argues that although no one could prove that the sighting was a real extraterrestrial, no one could prove that it was not one either. This is a bogus argument. It would be unreasonable to expect the police to be able to solve every single crime. In many instances, incriminating evidence is simply no longer available at the scene of the crime. Why then should skeptics be expected to explain every single claimed sighting? Many such sightings will always remain as literally *unidentified*. It is a great and unwarranted inferential leap to assumed that "unidentified" equals "extraterrestrial." The burden of proof clearly lies with the claimant.

Another common theme in the UFO literature is that certain groups of people cannot be fooled into misperceptions that might plague ordinary folk because they are "trained observers." Great credence is therefore given to the testimony of pilots, military personnel, and police officers. In fact, a vast amount of psychological evidence shows that we are all notoriously unreliable when it comes to eyewitness testimony, especially in less-than-perfect viewing conditions and when we are not sure what we are looking at. These are exactly the conditions that usually characterize UFO sightings. What often happens in these circumstances is that witnesses are influenced by their own expectations and will unintentionally add in details that fit those expectations. Thus, while investigations often reveal that what claimants saw in a particular case must have been a known astronomical event, such as a meteor, given its position in the sky and the time of the sighting, this does not prevent the witness from sincerely reporting details that are more consistent with a flying saucer than a meteor (e.g., seeing ETs in silver suits through windows on the craft). Furthermore, many such cases exist involving experienced pilots, astronomers, and even American presidents. Indeed, the late J. Allen Hynek, described in Pope's book as "perhaps the single most significant figure in the study of UFOs over the past forty-odd years," was of the opinion that, "Surprisingly, commercial and military pilots appear to make relatively poor witnesses."

There are, of course, UFO claims for which we have apparently stronger evidence than the reports of potentially unreliable, if sincere, witnesses. Many photographs and videos are presented as evidence. Cases involving some kind of physical evidence are known as "close encounters of the second kind," in contrast to close encounters of the first kind—that is, mere sightings. Once again, Pope's presentation of this evidence seems to be somewhat biased, making it appear stronger than it actually is. For example, he quotes the opinion of the generally skeptical Condon Committee—a group of independent scientists asked to investigate the UFO phenomenon by the United States Air Force in the 1960s—regarding two famous photographs taken in 1950 by a Mr. and Mrs. Trent on a farm near McMinnville, Oregon. They appear to show a large, metallic disk flying over the farm. Regarding this case, the Condon Committee wrote:

> This is one of the few UFO reports in which all factors investigated, geometric, psychological and physical, appear to be consistent with the assertion that an extraordinary flying object, silvery, metallic, disc-shaped, tens of metres in diameter and evidently artificial, flew within sight of two witnesses.

Pope presents the above quotation, giving the impression that the Trent photographs present very convincing evidence. In fact, however, analysis by leading skeptic Robert Sheaffer has cast great doubt upon the authenticity of the claim.

For example, his analysis of the patterns of light and shade in the photographs suggests that the pictures could not possibly have been taken at the time the Trents claimed. William K. Hartmann, chief photograph analyst for the Condon Committee and author of the above quotation, was so impressed by Sheaffer's analysis that he publicly reversed his earlier positive opinion and declared that he believed the photographs to be a hoax. You will not find that information in Pope's book.

Similarly, Pope describes the spectacular UFO photographs taken by Ed Walters of Gulf Breeze, Pensacola, Florida. Walters claims that the photographs show a UFO that emitted a blue shaft of light which lifted him off the ground. What Pope does not tell his readers is that a model of a UFO that looked just like the UFO in the photographs was found under the insulation of a garage by the new owners of a house previously occupied by Walters. It was made, in part, out of a house plan that Walters himself had drawn. Additional evidence points strongly to a hoax. (Incidentally, in one episode of *The X-Files,* "the other Fox Mulder" commented that he had realized at once that the Gulf Breeze photographs were fakes.) None of the evidence of a hoax is presented by Pope. Is that really a fair and open-minded approach?

Perhaps the evidence relating to close encounters of the third and fourth kinds, alien contact and abduction, respectively, will prove to be more convincing? Much of the early evidence relating to alien-contact claims was not taken very seriously even by UFOlogists at the time. In 1952, George Adamski claimed to have met and communicated with an alien from Venus. Subsequent space probes have shown that the planets described by Adamski as being inhabited are barren wastelands, not at all as he described them. Even Pope accepts that Adamski was probably a fraud. Careful reading of his book reveals that he is also cautious with respect to alien-abduction claims. While he is happy to speculate wildly concerning the *possibility* that such claims are true, he stops well short of actually endorsing them. He discusses the possibility that they represent nothing more than hypnotically induced false memories or malfunctioning of the temporal lobes.

On other occasions, too, Pope is skeptical regarding particular claims that other UFOlogists take seriously. He seems to accept that the notorious "MJ-12" documents are forgeries. The documents were alleged to show that President Truman had set up a top-secret committee named Majestic-12 to report to him personally on the Roswell incident. But the evidence that they are forgeries is very strong, thanks to the investigative efforts of Philip J. Klass, the world's leading UFO skeptic. For example, Truman's signature appears to have been photocopied from another document. Pope is also skeptical regarding the recent footage claiming to show an autopsy of one of the aliens recovered from Roswell. Like most other commentators, he thinks it is a hoax.

In contrast, Pope is often guilty of the most amazing credulity. He seems to take seriously Erich Von Däniken's ludicrous ancient astronaut theory, despite the fact that it has been totally discredited by Ronald Story and others. The same applies to Charles Berlitz's outrageous claims regarding the Bermuda Triangle. In one of the most comprehensive debunkings ever, Larry Kusche has shown that there is simply no mystery to be solved with respect to the Triangle. Pope also gives a totally uncritical summary of Wilhelm Reich's bizarre orgone energy theory without any awareness, it would seem, that the theory has no support whatsoever among scientists. Pope is quite happy to engage in wild and unfounded speculation himself. He argues that the so-called Beast of Bodmin might actually be a shape-shifting extraterrestrial.

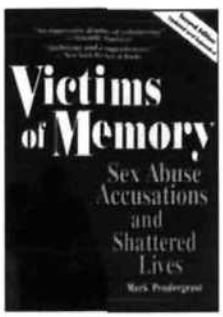
Pope devotes complete chapters to cattle mutilations and crop circles, arguing in each case that alien visitors may be responsible. Naturally, Pope rejects the official explanation for cattle mutilations, which is that when cattle die naturally and are subsequently eaten by scavengers, soft body parts such as the genitals are eaten first, giving the impression of some kind of strange surgical procedure.

Regarding crop circles, Pope believes that so-called "cerealogists" can generally tell a hoax from the "real thing." This, of course, assumes that there is such a thing as the "real thing." Pope believes that there are important differences between hoax circles and "genuine" ones, including the fact that the latter will be detectable by dowsing. However, he readily admits that two self-appointed experts, Pat Delgado and Terence Meaden, publicly endorsed as genuine two circles known to have been produced by hoaxers. Pope acknowledges that hoaxers such as Doug Bower and Dave Chorley, and groups like the Wessex Sceptics, have produced many of the circles but then goes on to argue that hoaxers could not possibly be responsible for all of the circles or else they would have been caught in the act. But if they can get away with it some of the time, why not all of the time? Pope's argument here is particularly puzzling given that he describes how, during one organized cropwatch, hoaxers were able to produce a hoax circle under the very noses of the assembled cropwatchers, despite a sophisticated array of cameras, including infrared equipment.

The appeal of UFOs and the paranormal is tremendous and seems to be on the increase if media coverage is anything to go by. We are all attracted to mysteries, and skeptics are not usually welcome to pour cold water upon such claims. That was certainly the case when I appeared on *The Time, The Place,* the program that had asked me to take part in my usual role as token skeptic. A show of hands before the program went on the air revealed that only about three other people in the audience were skeptical—quite representative of this type of program. As usual, I was lucky to avoid a lynching.

Pope says somewhere in his book that a mind is like a parachute—it has to be open to work properly. Skeptics might

reply that if you leave your mind too open, you will find that there are always plenty of people around to fill it with rubbish. Pope consistently fails to present the skeptical case in anything but a weak caricature. At the end of the TV program I was able to quickly ask him, before he was rushed off for his next media appointment, whether he had actually read the books of leading skeptics, such as Philip Klass and Robert Sheaffer, given that no reference is made to these people in his book. "Well, not actually cover to cover . . . ," he candidly replied. There are probably less than a half a dozen classic skeptical books on UFOs. Nick Pope was in his post at the Ministry of Defence for over three years. Would not someone with a truly open mind have found the time to read these books? □



Victims of Therapy or Victims of Memory?

PETER HUSTON

Victims of Memory: Sex Abuse Accusations and Shattered Lives. By Mark Pendergrast. Upper Access Books, Hinesburg, VT, 1996, second edition. ISBN 0-942679-18-0. 635 pp. Paperback, $24.95. Orders 1-800-356-9315.

Ever since Freud, many educated people have believed that the mind sometimes represses memories of unpleasant or unacceptable events, and that a skilled psychotherapist can dramatically facilitate the "recovery" of these hidden memories, thus producing therapeutic results. Unfortunately, there are problems with this concept. First, there is little scientific evidence that memories can be repressed. Second, if memories are truly forgotten, they probably can't be recovered. They are, like Clementine, lost and gone forever. Third, it is highly questionable whether these procedures do produce therapeutic effects. Finally, if the "memories" are of childhood sexual abuse, as they frequently have been over the last few years, then somebody is likely to get accused, falsely, as the perpetrator of one of the most horrible crimes that exists. All in all, "repressed memory therapy" is not a pretty thing.

Victims of Memory: Sex Abuse Accusations and Shattered Lives, by Mark Pendergrast, is the most comprehensive book currently available on this timely and important subject. Pendergrast, an investigative journalist, knows firsthand what it feels like to lose children to this form of therapy. He has lost all contact with his two daughters. This book is all the more remarkable, then, since it provides such a well-researched, evenhanded look at this phenomenon.

In this, the second, updated edition of this critically acclaimed book, Pendergrast begins with a chapter that chronicles how the "survivor movement" began in the early 1980s and provides horrifying quotations from books, such as *The Courage to Heal,* that helped promote the concept of repressed memories of sexual abuse. Then, in a chapter on human memory, he looks at the controversy from all angles and concludes that there is no evidence for the repression of long-term, continuous abuse—what he terms "massive repression." Next, he explains how people can come to "believe the unbelievable," through hypnosis, misinterpretation of panic attacks and sleep paralysis, dream analysis, group pressure, and other means. Another chapter debunks multiple-personality-disorder and satanic-cult claims. These sections are, like all of the book, thoroughly documented and footnoted.

At the heart of the book are unique, valuable interviews with persons on all sides of the issue—therapists, "survivors," the accused (generally parents), and "retractors," those who once believed themselves to be victims but have concluded that their "recovered memories" were in fact false. Through these voices, we get a very real, human picture of the issue from all sides. We learn of the social value that "victimhood" has for some persons. We also get to see the trauma resulting from real sexual abuse, as well as inappropriate therapy.

This issue tends to polarize people. True sexual abuse is horrible, and assistance, support, and aid must be provided for victims, as Pendergrast repeatedly stresses. Yet one reason the abuse is horrible is simply because people do not forget it. Memories of the abuse intrude at inappropriate times, interfering with day-to-day living, causing further problems and continuous emotional suffering to the victims. To some extent, "therapies" that falsely induce such memories inflict similar emotional suffering on people who have never been sexually abused. Such therapy is inhuman and cruel. All concerned with the state of mental health care should examine this issue intellectually, instead of accusing critics as somehow "uncompassionate" or "anti-victim."

Through these interviews, Pendergrast provides insights into how such memories are induced by well-meaning therapists in unsuspecting patients. Several pseudoscientific forms of therapy are represented in the interviews or discussed elsewhere in the book, including "past life therapy," recovery of "body memories" through massage, and recall of "repressed UFO abduction memories."

The rest of this massive book covers related matters. Chapter nine reveals how false accusations of child sexual abuse occur and develop, including bizarre, multivictim day-care-center cases of alleged satanic ritual abuse, as well as smaller, more confusing reports involving individual parents and children. Chapter ten provides historical context, briefly

Peter Huston writes from Schenectady, New York. He is the author of two books, including Scams from the Great Beyond, *due out in January 1997 from Paladin Press.*

describing witchcraft trials, strange therapy crazes, and Freud's theories and legacy. Chapter eleven, "Why Now?," places the whole debate in its current social context. Chapter twelve, "Survivorship as Religion," compares the repressed memory movement to a religious sect or cult, with interesting anthropological, psychological, and theological insights. Chapter thirteen offers a summary, an estimate of the scope of the problem (millions of cases, according to Pendergrast), and concludes with legal and professional recommendations and advice to affected families.

Victims of Memory is an "impressive display of scholarship," as the *Scientific American* review of the first edition termed it. The book's only drawback is its length, which at 635 pages is somewhat overwhelming, but there are compensations such as extensive indexing and largely self-contained chapters that can stand on their own.

Those who already own the first edition may want to save twenty-five dollars by reading new sections in a library copy, but Pendergrast has added a substantial amount of material here, including a riveting interview with a "retractor therapist" who is agonized over what she did to former clients, an appendix of "myths and realities," and much material about so-called "Christian counselors" who have helped destroy families. Those who haven't read the first edition—particularly skeptics or affected family members—should own this fascinating, disturbing book. □

NEW BOOKS

Climbing Mount Improbable. **Richard Dawkins.** W. W. Norton & Company, Inc., 500 Fifth Ave., New York, NY 10110. 1996. 340 pp. ISBN 0-393-03930-7. $25 USA. $32.99 Canada. Hardcover. The central metaphor of Dawkins's *Mount Improbable* refers to the combination of perfection and improbability that to many seems to point to a seemingly "designed" perfection of all living things. The noted zoologist and author of *The Selfish Gene* and *The Blind Watchmaker* here provides a vision of life that reveals how evolution can and does fashion the myriad structures, assemblages, and behaviors that account for the enormous diversity of life. From spider webs, to the evolution of wings and of elephant trunks, to the evolution of the eye (evolved at least forty times independently throughout the animal kingdom), to computer programs that assist us in understanding the processes of evolution, Dawkins applies his usual clarity and elegance to explain, astonish, and inform.

Crazy Therapies. **Margaret Thaler Singer and Janja Lallich.** Jossey-Bass, Inc. 350 Sansome Street, San Francisco, CA 94104. 1996. 288 pp. ISBN 0-7879-0278-0. $23. Hardcover. An exposé of the alternative philosophies and practices found in today's psychotherapeutic marketplace. By a Berkeley clinical psychologist and professor and a writer on cults, the book aims to help consumers make distinctions between legitimate, scientifically based, professionally accepted therapies and those that are less so. Most of the latter are highly controversial. Among the topics: regression, reparenting, rebirthing, past-life/future-life therapy, channeling, "entities," ETs, neurolinguistic programming, facilitated communication, neural organization technique, and eye movement desensitization and reprocessing (EMDR). A final chapter discusses "How Did This Happen, and What Can You Do?"

The Dictionary of Metaphysical Healthcare. **Jack Raso,** M.S., R.D. The National Council Against Health Fraud. P.O. Box 1276, Loma Linda, CA 92354-1276. 1996. 93 pp. $18 plus $3 shipping/handling. Dictionary and diskette (expanded version) $21 plus $3 shipping/handling. Paper, spiral bound. More than 1,100 entries on medical *alternativism,* a word coined by the author, a noted critic of the field, to refer to the diverse movements whose central thesis seems to be subjective experience, revelation, and a rejection of rationality and science. From "abhyanga" (an Ayurvedic "rejuventating cure") to "distant healing" to "kundalini yoga" to "radiesthesia" to "vital force," Raso provides for each entry a straightforward description of the "alternative method," with no or minimal editorializing. "Truly a catalogue of human folly," says Marvin J. Schissel in the introduction.

Multiple Identities and False Memories. **Nicholas P. Spanos.** American Psychological Association, P.O. Box 92984, Washington, D.C. 20090-2984. 1996. 371 pp. ISBN 1-55798-340-2. $29.95 plus $3.50 shipping/handling. Hardcover. A major analysis and critique of the assumed connection between multiple personality disorder (MPD) and the recovery of repressed memories of childhood physical and sexual abuse. In a book written before his tragic death in an airplane crash in 1994, Spanos argues that MPD (recently renamed Dissociative Identity Disorder) is not a "disease" at all but a "social construction" that serves the various purposes of MPD patients, their therapists, and elements of society. Spanos, who was one of the world's most prolific and highly respected researchers into hypnosis, describes the many studies showing that hypnosis does not produce a unique state of consciousness and does not cause people to lose control of their behavior or thought processes. Nor does it improve accuracy of recall. Although multiple identity seems to be a concept widely accepted in popular culture, many experienced psychotherapists have never seen a case of it, and most cases are reported by a relatively few therapists. Spanos examines and critically explores the nature of memory and the issues surrounding the reported recovery of memories of abuse, as well as the social forces influencing all these matters.

The Strange Case of the Spotted Mice. **Peter Medawar.** Oxford University Press, Walton Street, Oxford 0X2 6DP, U.K. 1996. 236 pp. ISBN 0-19-286193-X. $12.95. Paperback. No one wrote about science with greater literary elegance, scientific erudition, and humanistic appreciation than the late Nobel laureate biologist and immunologist Peter Medawar. Here is a collection of his classic essays on science, with an introduction by Stephen Jay Gould, who refers to Medawar as "a paragon of rationalism. I have never met a man more committed to that combination of logic and common sense that we call science at his best." Medawar here deals with such diverse topics as the phenomenon of man; hypothesis and imagination; two conceptions of science; Darwin's illness; science and the sanctity of life; expectation and prediction; scientific fraud; and the question of the existence of God.

—Kendrick Frazier

Abbott, Alison, and Gabor Stiegler. "Support for Scientific Evaluation of Homeopathy Stirs Controversy." *Nature* 383: 285 (September 26, 1996). A study funded by the European Commission, consisting of half skeptics and half proponents of homeopathy, reached consensus on one of its most important questions—deciding that there is no valid reason to exempt homeopathy from normal scientific rules of clinical and preclinical evaluation. According to one participant, the group decided that the efficacy of homeopathy can be tested but that this had not yet been done. Now the commission faces the decision whether to start European-level clinical trials.

Begley, Sharon. "Heretics in the Laboratory." *Newsweek*, September 16, 1996, 82. Science writer briefly addresses the questions, "Can a creationist be a good scientist? And vice versa?" She notes that evolution is the "defining paradigm of biology," and "the overwhelming weight of evidence supports evolution." The presence of creationists in the lab is a reminder that scientists are human and no more free of powerful ideology than anybody else. Letters of response, mainly from creationists, appeared in the October 7 issue, pp. 22-23.

Bork, Diana Culp. "A Florida Judge Lets Junk Science into Her Courtroom." *The Wall Street Journal*, June 26, 1996, A19. Report on "a triumph of bad science," a Miami case in which a court awarded $4 million to the parents of a child born blind and with underdeveloped eyes who alleged that the birth defect was caused by a mist of the DuPont fungicide Benlate. Not only did the farmer in question testify that he was not using Benlate at the time of the incident, no single reputable scientific organization has found any link between Benlate and eye defects. The jury was swayed by expert testimony that was highly questionable, says Bork. She concludes that until judges prevent unwarranted jury verdicts, "the Frankenstein monster of junk science will be a regular visitor to America's courtrooms."

Dawkins, Richard. "Human Gullibility Beyond Belief." *The Sunday Times* (London), August 25, 1996. The noted biologist and defender of evolution here turns his attention to paranormal tricksters doing conjuring tricks on British television programs and being proclaimed masters of extraordinary powers. "The recent splurge of paranormalism debauches true science. . . . The universe is a strange and wondrous place. The truth is quite odd enough to need no help from pseudoscientific charlatans."

Glickman, Robert, and Janet Burns. "If Therapeutic Touch Works, Then Prove It!" *RN*, December 1996. A challenge by two nursing professionals to those claiming to be able to sense the "human energy field." What makes this article significant is that until now, influential nursing journals have been reluctant to publish articles critical of "therapeutic touch" (TT). These two nurses recount their failed effort to test a TT practitioner who studied with Delores Kreiger. This failure, and the reluctance of others to come forth to be tested, persuaded them against integrating TT into their daily routine.

Gould, Stephen Jay. "Creating the Creators." *Discover*, October 1996, 43-44, 48-54. If creation demands a visionary creator, then how does blind evolution manage to build such splendid things as ourselves? Lengthy essay argues that three basic principles give evolution its creative capability to originate novel structures and functions: quirky shifts and latent potential, massive redundancy, and selected flexibility. "All three share the common property of emphasizing flexibility and latent potential, rather than the admirably precise adaptation that serves as a paradigm for textbook illustrations of evolution."

Milner, Richard. "Charles Darwin and Associates, Ghostbusters." *Scientific American*, October 1996, 96-101. When the scientific establishment put spiritualist Henry Slade, who was bilking gullible Londoners, on trial, it was one of the strangest courtroom cases in Victorian England. Some saw it as an arena for science to score a triumph over superstition. Others saw it as a declaration of war between professional purveyors of the paranormal and honest stage magicians. But the trial was unique in another way: The two greatest naturalists of the nineteenth century, the two co-discoverers of natural section, took opposing sides. In one of the more bizarre and dramatic episodes in the history of science, Charles Darwin gave aid and comfort to the prosecution, and his old friend Alfred Russel Wallace, a sincere spiritualist, was the defense's star witness.

Schmidt, Karen. "Creationists Evolve New Strategy." *Science* 273: 420-422, (July 26, 1996). Important article outlining the latest tactics creationists are using to sneak their religious beliefs into science classrooms. Creationists no longer ask that schools teach Genesis or "creation science." Instead, they insist that teachers give equal time to "scientific evidence against evolution" or ask them to present evolution as theory, not fact. This "soft-core anti-evolution strategy" is very clever because it doesn't appear religious on the surface, says Eugenie Scott, president of the pro-evolution National Center for Science Education. The new semantic mutations of creationist dogma are effective and worrisome to scientists because they prey on a public unprepared to recognize pseudoscience. Article details the latest creationist campaigns and scientific efforts to combat them. Four letters stimulated by Schmidt's article are published in *Science* 273:1321-1322 (September 6, 1996) under the title "Teaching Evolution."

Stix, Gary. "Profile: Wayne B. Jonas." *Scientific American*, October 1996, 52, 56. Profile of the new head of the congressionally mandated Office of Alternative Medicine at the National Institutes of Health. Stix says it is unclear whether Jonas can reconcile his commitment to running a serious research program with his personal belief in the merits of alternative medicine. He speaks of impartiality, but "Jonas is more a true believer than he at first lets on," says Stix. For instance, Jonas omitted telling Stix that he is co-author of *Healing with Homeopathy: The Complete Guide*, published in August.

Wiseman, Richard, and Peter Lamont. "Unravelling the Indian Rope-Trick." *Nature* 383: 212-213 (September 19, 1996). An attempt to assess the reliability of impressive eyewitness reports of "perhaps the world's best-known secular miracle—the Indian rope-trick." The psychologist authors hypothesized that if eyewitnesses were exaggerating their accounts over time, one might expect a positive correlation between the impressiveness of the account and the length of time between performance and report. A panel of magicians rated the impressiveness of twenty-one accounts that were firsthand, detailed, and dated. Analysis "strongly suggests" that witnesses' testimony had become significantly more elaborate over time. This "supports a skeptical view of the Indian rope-trick and casts doubt on testimony relating to other alleged extraordinary events."

—Kendrick Frazier

Reason Unbalanced

DAVID A. SHOTWELL

Phillip E. Johnson is a professor of law and a defender of Christian theism. His recent book, *Reason in the Balance* (InterVarsity Press, 1995; reviewed in *SI*, January/February 1996), is an attack upon the theory of evolution and the naturalistic worldview that is held by many scientists. He rejects the fashionable claim that theism and science belong to separate spheres, one depending upon faith, the other upon observation and reason. He assures us that he wishes ". . . to encourage critical thinking about first principles so that we base our thinking upon truth and not error." One would expect, therefore, to find in his book a defense of theism in terms of "natural" theology: Aquinas or Paley recycled and updated. Arguments of that type are at least implicit in some passages, but Professor Johnson's primary strategy is indistinguishable from that of the "scientific" creationists, even if he does not subscribe to all of their views. Its essence can be briefly but accurately summarized: The account of animal and human evolution given by modern biology is defective; it fails to explain how complex systems developed out of simple ones, nor does it explain how life began. Conclusion: Belief in the supernatural, specifically the God of Christianity, is vindicated, or is at least an alternative worthy of serious consideration. Such reasoning could serve as a textbook example of a nonsequitur, as could the following: Psychologists do not yet know the cause or causes of psychosis, and they have no treatment for it that is both safe and effective. Therefore, the belief that psychotic patients are possessed by demons, and that exorcism is called for, is proved or strongly confirmed. It would not be surprising if Professor Johnson were to endorse this argument, for the Bible tells us that Jesus expelled demons from afflicted persons and delegated to his disciples the power to do likewise. He could consistently maintain that only the prejudices of scientists cause them to dismiss demonology as superstition.

Professor Johnson correctly observes that if God (by which he does not mean merely a first cause of some unspecified sort, but the God of Christianity) exists, then a person or society that ignores Him is irrational. We can, with equal correctness, say that if witches exist and are using powers acquired from Satan to cause epidemics, famines, and earthquakes, then society should not ignore them but should try to detect and oppose them. Ordinary thieves and murderers are minor menaces compared to such embodiments of evil.

Professor Johnson's assertion that scientific naturalism is built upon a foundation of sand, and his denial that science and the supernatural are mutually exclusive, leads one to expect that he will specify the features that a revised and nonnaturalistic science should possess. Apart from lip service to reason and rationality, and assurances that the factual premises of Christianity are true, no answer to this question is given. His theism appears to be based upon revelations from God that have been granted to some persons, but he admits (to this reader's surprise) that telling the difference between true and false prophets is difficult. Again, we are not told what criteria are to be used to arrive at a decision or in what respect reliance upon revelation differs from faith.

According to Professor Johnson, scientific naturalists retreat quickly when challenged but resume their bold advance as soon as the heat is off. They protect their turf by evading tough questions and work to prevent open and dangerous debate over fundamental assumptions.

I find that picture unrecognizable. Naturalists and supernaturalists have been battling since the time of Hume, in both popular and academic settings. All the major issues raised by Professor Johnson have been debated, with no shortage of challenges and responses on either side. His main complaint, clearly, is that orthodox Christianity has been losing ground, and that scientists dismiss supernaturalistic hypotheses as

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sterile and useless for both practical and theoretical purposes. Let us imagine, however, the following experiment. Select a large group of children, all of them afflicted by unmistakably organic illnesses or defects. Let them be prayed over by clergymen chosen for piety and probity, and monitor the results. Suppose that new limbs grow to replace those that were deformed or missing, congenital blindness is cured, and damaged brains become normal. Suppose further that these and other effects are certified through affidavits by a committee of physicians, not all of whom already believe in miracles, and that the experiment, repeated by other observers, continues to yield positive results. In that event, even hardened skeptics would be forced to reconsider their views. Here is an opportunity to deal a body blow to atheists and infidels, and send the faithful into ecstasies. Is that too much to ask of Omnipotence? Apparently so. "Faith-healers" have never requested such a test, probably because they know what the results would be.

Professor Johnson poses this question, which he refers to as the problem of self-reference: If the materialistic "theory of everything" that some scientists hope to discover is true, then the operations of the human mind are determined, along with all other events, by natural laws. How, in that case, can scientists be confident that their reasoning is correct? But if this is a problem for naturalists, supernaturalists are in no better position. Descartes made the point by imagining a malicious demon, an archdeceiver whose effect upon the intellect would be to make false propositions appear self-evidently true. If, for any reason, someone considers seriously the hypothesis that his own thought processes are defective, he can decide to dismiss it but cannot, without circularity, refute it by reasoning.

One need not subscribe to Professor Johnson's philosophical views to share his distaste for some features of modern liberal culture. His comments upon society's indulgence and encouragement of irresponsible hedonism, and the transformation of liability law into a means of extortion, are effective and sometimes eloquent. But the belief that religion, any more than science, offers remedies for such social ills is not supported by the history of nations in which a religious worldview was dominant. □

Swift, Boone, and Bigfoot: New Evidence for a Literary Connection

DAVID MATTHEW ZUEFLE

Are stories about Bigfoot, the mystery ape-man of North America, grounded in fact, legend, hoax, or something else? In the Fall 1994 SKEPTICAL INQUIRER, Hugh H. Trotti speculates in his Forum column "Did Fiction Give Birth to Bigfoot?" that the genesis of Bigfoot (or Sasquatch) may be found in English literature.

Trotti notes that in John Mack Faragher's biography of Daniel Boone, *Daniel Boone: The Life and Legend of an American Pioneer* (Faragher 1992), Faragher claims Boone told "tall tales" about "killing a ten-foot, hairy giant he called a 'Yahoo.'" Of course, the Yahoos were large, hairy, man-like creatures described in Jonathan Swift's classic of satire and irony *Gulliver's Travels* (see the chapter "A Voyage to the Country of the Houyhnhnms"). It was further noted by Trotti that Faragher details Boone's familiarity with *Gulliver's Travels*. In fact, Faragher states the book was one of Boone's favorites and that Boone frequently carried the book with him into the woods. These facts fueled Trotti's speculation that the Bigfoot legend actually arose from Boone's retelling of the Swiftian saga as part of his own exploits throughout the American frontier in the late eighteenth and early nineteenth centuries.

First of all, let me say that although I believe Trotti's hypothesis to be potentially testable, it is insufficient to account for the multitude of ape-man legends (including Bigfoot) in their entirety. The various legends concerning Bigfoot-like creatures come from around the world, and speculations about them range from the improbable-yet-possible (that Bigfoot is an undiscovered animal or a remnant population of an ancient primate species like *Gigantopithecus*) to the wildly bizarre (that Bigfoot is an extraterrestrial being or an entity that can travel between dimensions). Further, it appears that some of the legends originated in widely dispersed indigenous cultures, and many of their myths apparently predate Swift's Yahoos. And more specific to Trotti's claims, while Bigfoot reports come in from a wide variety of locations within the United States, the Appalachian region that Boone lived in

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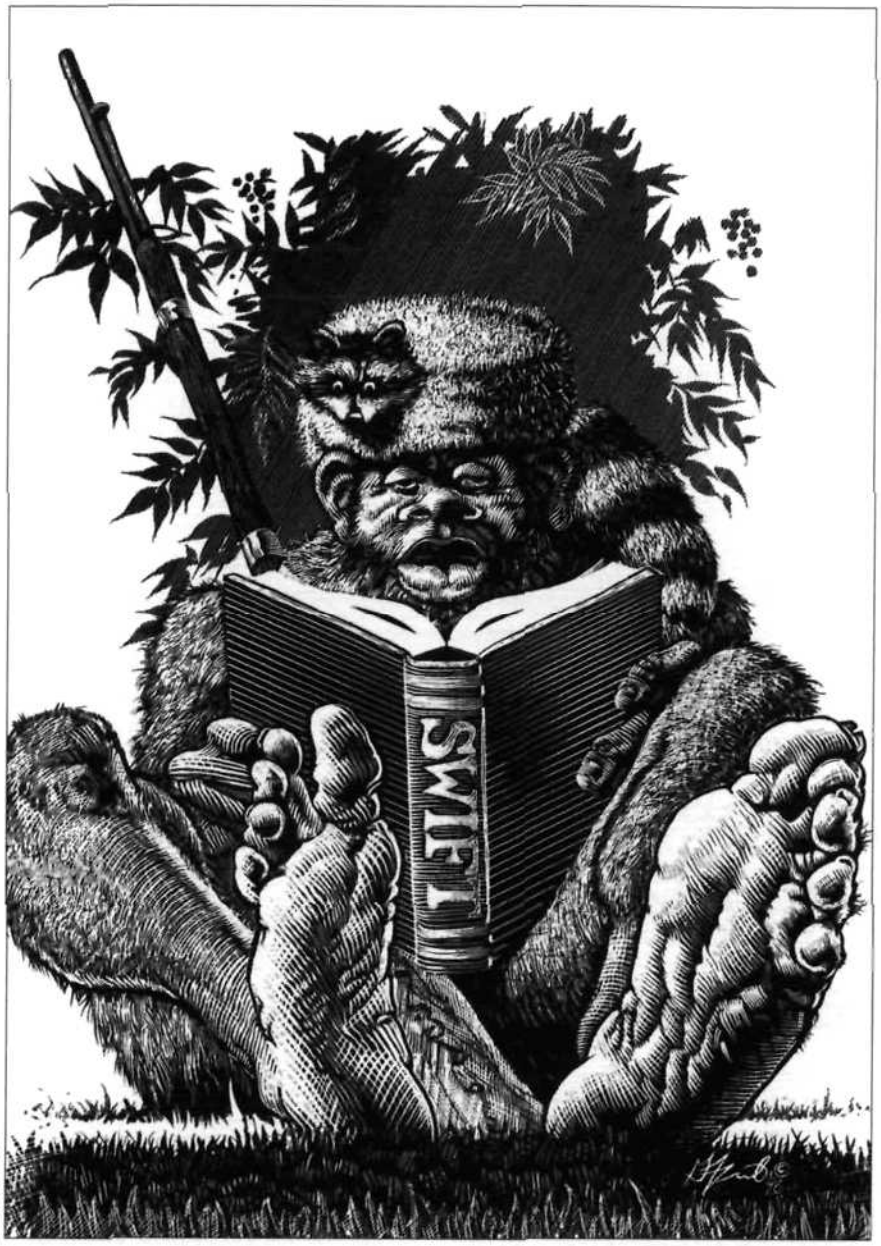

Gerald Fried

produces nowhere near the number of reports that are filed from areas like the Pacific Northwest and the Rocky Mountains.

However, with these caveats in mind, there is some evidence that Trotti's speculation could be right. Consider a research note by Leonard Roberts from the journal *Western Folklore* (Roberts 1957). Roberts reported that he had encountered "four or five versions" of what he called "a curious and strange legend" he collected from an isolated region of the Kentucky mountains. The stories centered around large, hairy wildpeople who lived in the woods. In one version of the story, told by a Mr. Lee Maggard of Harlan County, Kentucky, the cave-dwelling wildperson is specifically called a "Yeahoh." Could "Yeahoh" be a corruption of Swift's "Yahoo," and could this be evidence that Boone's tall tales survived over one hundred years of retellings in the Kentucky highlands? Aside from the phonetic similarity of the creatures' names, another interesting parallel between the Kentucky Yeahoh and Swift's Yahoo is in the behavior attributed to each. Most notably, Maggard describes the Yeahoh as repeatedly making the sound "yeahoh, yeahoh"; Swift described his Yahoos as uttering their own eponymous sounds in a similar manner.

The idea that the tales of Maggard and the other Kentuckians were orally transmitted (and corrupted) versions of Swift's fiction that have survived the generations since the original and impressive tale-spinning of the folk hero Daniel Boone is only one possibility. Of course, it is also possible that the conversion of the story from written literature to oral folklore did not involve Boone at all, or that the similarities between Swift's writing and the Kentucky folktales are only coincidental. However, I believe the similarities are striking, and the possibility of a Swift-Boone connection is strong in the light of facts from the Faragher biography. Therefore, this anecdotal evidence may, in fact, provide support for Trotti's hypothesis. So while Trotti may not have answered all questions about Bigfoot or the origins of the Bigfoot legend(s), he may have accurately fingered a literary connection that has contributed to the mythos. By the way, there is an emerging legend of a Bigfoot-like creature said to inhabit the Great Dividing Range in Australia. Those who talk about the beast call it the "Yowie."

References:

Erskine-Hill, H. 1993. *Swift: Gulliver's Travels.* New York: Cambridge University Press.

Faragher, J. M. 1992. *Daniel Boone: The Life and Legend of an American Pioneer.* New York: Henry Holt & Company.

Roberts, L. 1957. Curious legend of the Kentucky mountains. *Western Folklore* 16(1): 48–51.

Swift, J. 1961. *Gulliver's Travels.* New York: W. W. Norton & Company, Inc.

Trotti, H. H. 1994. Did fiction give birth to Bigfoot? SKEPTICAL INQUIRER 18(5): 541–2. □

Hugh H. Trotti provides this addendum:

If the concept of Bigfoot originates in Swift's literature, there may be a parallel line of belief descending from Carolus Linnaeus's "semi-human," since in 1758 the latter theorized that a form between man and ape existed, which he named Homo troglodytes *(see Roger Lewin,* Bones of Contention, *New York: Simon and Schuster, 1987, p. 304).* Gulliver's Travels *was somewhat earlier, but the question arises: Could both authors have been influenced by the tales of African explorers?*

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SPRING 1994 (vol. 18, no. 3): The Antiscience Threat: The growth of antiscience / The antiscience problem / Measuring the prevalence of false memories / Bleuler's views on inheritance of acquired characteristics and on psi phenomena / Examining the satanic panic: . . . A personal perspective . . . A sociological and historical perspective / Philosophy and the paranormal, Part 2: Skepticism, miracles, and knowledge.

WINTER 1994 (vol. 18, no. 2) The new skepticism / Philosophy and the paranormal, Part 1: The problem of 'psi.' / Electromagnetic field cancer scares / Attacks on role-playing games / Global fortune-telling and Bible prophecy / Chernikov pattern puzzle.

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Science Fiction and Skepticism

I read with interest your series of articles on science fiction and skepticism (September/October 1996). As a writer of science fiction such as *Black Holes: A Traveler's Guide* and *Chaos in Wonderland: Visual Adventures in a Fractal World*, I like to carefully develop my worlds and creatures. In *Chaos in Wonderland* I give background on the sociology, biology, and technology of the limbless mathematicians whose semiconductor heads allow them to compute beautiful patterns to gain status in their society. In both books, I even go a step further and provide program code to help readers explore the science in the science fiction.

I wonder what science fiction stories a hundred years from now will be like. I fear that we are limited in our ability to understand the universe. Humans are a moment in astronomic time, a transient guest of the earth. Maybe our minds have not sufficiently evolved to comprehend the mysteries of space time. Perhaps our brains, which evolved to make us run from lions on the African savanna, are not constructed to penetrate the fabric of the universe. Imagine an alien with an IQ a hundred times our own. What profound concepts or areas of awareness might be available to this individual to which we are now totally closed? A dog cannot understand Fourier transforms or gravitational wave theory. Human forebrains are a few ounces bigger than a dog's, and we can ask many more questions than a dog. Are there facets of the universe we can never know? Are there questions we can't ask?

Clifford A. Pickover
Yorktown Heights, N.Y.

I found your recent articles on science fiction, skepticism, and reality to be especially interesting. I noted that you felt it necessary to point out that the science fiction novelists who wrote these articles are writers of "hard science fiction," and for good reason. Science fiction as a label has come to represent a wide variety of styles and formats. *Star Wars* is science fiction, but it is not hard science fiction, the branch of science fiction that hews as closely as possible to scientific fact within its speculations.

Certainly, hard science fiction can be effectively used to explore the paranormal in a healthy, skeptical light, but it's quite unrealistic to expect all "science fiction" to present such concepts in the same light. The power of science fiction is its ability to explore ideas, circumstances, and situations that have never existed in the past and present, and to suggest how people should best deal with them. The power of reality is that those ideas most in harmony with it are the ones that are the most effective.

The problem is that we all have to deal with and rely on other people, many of whom are quite irrational in their approaches to life. I am beginning to think that the best hope of promoting rationality and skepticism in our society is through a better understanding of psychology and sociology, both of which are, unfortunately, still very limited in their progress. Most of what we know about the human mind and society is based solely on empirical knowledge. Until much more work is done in these areas, mysticism and superstition (and religion and politics) will continue to have a powerful influence in our society.

Michael A. Clem
Tulsa, Okla.

Just a few pages after the report in the September/October 1996 issue on the World Skeptics Congress, where the need for making science more popular with (and accessible to) the masses was a recurrent theme, *SI* printed Eugene R. Stewart's essay on the value of science fiction. I had hoped that he might have some ideas on science fiction's potential for helping skeptics combat growing scientific ignorance and antiscience sentiments. I was disappointed. I must agree with Frederik Pohl's negative assessment of Mr. Stewart's essay: Stewart doesn't even seem to have a clear idea of what science fiction is.

Mr. Stewart seems to think that science fiction is potentially an excellent forum for exploring the "meaning" of paranormal and fringe-science issues. In contrast, I would claim that any fiction that centers on exploring such issues is explicitly *not* science fiction. Rather, it is fantasy.

Most attempts to delineate the realm of science fiction from other literature seem to boil down to something like "the fictional exploration of *possible* worlds." Science fiction is "the fiction of the possible" in the sense that, in all of the stories told and themes explored, there should be a sincere attempt to stick to what the culture of science knows (or suspects) about the universe, and to extrapolate (however broadly) from that knowledge.

(Admittedly, this rule is frequently fudged; faster-than-light travel is a common example. But faster-than-light travel is generally a plot device that moves a story along, not the focus of the story. . . .)

As "the fiction of the possible," science fiction is a wonderful venue for exploring the theme of real human possibilities, individual and cultural, good and bad. It is also an excellent way to generate enthusiasm about science in a society that seems to have lost it. The very best science fiction (Sturgeon's ten percent, if you will) can even reveal to us glimpses of our possible futures: Such stories can guide us with visions of great technological and social achievements, or caution us with images of technological havoc brought upon ourselves through foolishness and greed. Science fiction has real educational potential. . . .

If science is, as Carl Sagan's elegant metaphor has it, "a candle in the dark," then science fiction writers are the keepers of the flame. They tell us wonderful, inspiring stories of what might be waiting out there in the dark, just beyond the candle's light. They are the ones, more than anyone else, who inspire new generations of scientists and supporters of science. Those new generations are sorely needed, and so is science fiction.

George M. Felis
Atlanta, Ga.

After reading Eugene R. Stewart's rambling article on science fiction, I can only share Frederik Pohl's doubt that Stewart really knows what science fiction is. Stripped of verbosity, Stewart wants *scientists* to write science fiction with an emphasis on science to combat belief in the paranormal. As far as rallying scientists to write science fiction, he's late by about fifty-nine years. Or hasn't he heard of John W. Campbell?

Campbell was the editor of *Astounding Science Fiction* from 1937 until his death in 1971. I never exchanged a word with him but he had a big impact on my life. It was Campbell's *Astounding* that hooked me on science fiction at the tender age of

ten. I was already interested in science, and I guess I must have recognized that science fiction was my kind of literature.

Campbell had a stable of scientists writing for *Astounding*. Isaac Asimov, "Doc" E. E. Smith, Hal Clement, Lee Correy, Poul Anderson, L. Sprague De Camp, and a host of others with scientific backgrounds regularly contributed stories. Some of the tales were very "hard" science fiction indeed. Who can forget Tom Godwin's "The Cold Equations"? Of course, Campbell featured writers who were not scientists. I hope that Mr. Stewart would not be so parochial as to exclude a writer of the caliber of Theodore Sturgeon from the ranks of science fiction. So far as I know, Sturgeon had no scientific background, but his "Thunder and Roses" seared my ten-year-old brain with a realistic and grim portrayal of a post–nuclear war United States.

However, Campbell didn't just push for the interjection of science in stories; every issue of *Astounding* featured a science article. There were times when it was hard to tell the difference between the stories and the article. And there's the rub. As Greg Bear reminds us, science fiction is entertainment. You can build a story around science, but it has to be a good story. Otherwise, you might as well read a textbook. There was a lot that I loved about *Astounding*. However, as time went on, more and more poorly written stories were published because they reflected John Campbell's vision of not only science fiction but science. Campbell's technical background (he attended M.I.T. and I believe majored in physics) did not prevent him from having some distinctly strange views on what constituted science. Greg Bear mentions a "gullible, though very famous science fiction editor" who gave L. Ron Hubbard his start. That was John W. Campbell. Dianetics, as it was initially called, was presented in the pages of *Astounding* as a scientific breakthrough in psychotherapy. It was only later than Hubbard turned Dianetics into the religion of Scientology.

Edward S. Matalka
Holden, Mass.

At the risk of seeming to quibble over a small point, I must take exception to Mr. Stewart's call for science fiction to help us find "meaning." Beyond simply entertaining, science fiction might illustrate the scientific method, show what could happen if a particular physical law were just slightly different from what it is, or show what technology might make of existing physical laws. And, like all literature, science fiction might illuminate the universals, those things we all share as human beings. What science fiction cannot do, however, is help to find meaning, since meaning, in the sense of "the meaning of (one's) life," is really meaningless. . . .

Bion Smalley
Evanston, Ill.

Conspiracy Theories and Paranoia

I was skeptical when I first read Evan Harrington's report (September/October 1996) from the conference sponsored by the Society for the Investigation, Treatment, and Prevention of Ritual and Cult Abuse. Could presumably well-educated adults in our society really believe claims that belong on the covers of tabloid newspapers? My observations of middle school students tell me that they are much more capable of critical response than attendees at this conference.

Being awed by Harrington's claims, I reread the article. The characteristics of the presentations started to seem familiar during this second reading. This sent me to my back issues of SKEPTICAL INQUIRER, and within minutes, I found the source of this familiarity: Anthony Pratkanis' "How to Sell Pseudoscience" (July/August 1995). In that article, Pratkanis described nine tactics that can be used to sell pseudoscience. Looking again through Harrington's description of this conference, I was able to find several examples of how each was used. It appears Pratkanis has given good advice, as all conference attendees, except one, were duped.

Harrington's experiences illustrate how seemingly intelligent people believe arguments that are based on bad evidence or unreasonable claims, or even accept arguments contradictory to those accepted just moments earlier. This should cause each *SI* reader to ask if he or she is doing enough to promote responsibility and reason in his or her community.

Is anyone else now curious about the conferences attended by school counselors in their community?

Gary L. Ackerman
West Rutland, Vt.

Evan Harrington's article "Conspiracy Theories and Paranoia" got me so depressed. The existence of so many crackpot theories is not just sad—it's dangerous. These zealots have already destroyed lives with their wild accusations and unsubstantiated charges, and if enough people are swept in by the hysteria, I would not feel secure even in our supposedly enlightened nation.

Salem has already been revisited, in the epidemic of satanic child abuse charges. The Holocaust can also happen again, against the Jews or any other minority. All it takes is widespread fear and a target.

Under the circumstances, I shall be more tolerant of my friends who consult their horoscopes, commune with dead grandmothers, and place rocks under their pillows to cure their headaches. Theirs, at least, is a gentle delusion.

Bev Kaufman
Sunrise, Fla.

Evan Harrington's article was great! I'm dashing off copies to friends.

Two conferences speakers, Cathy O'Brian and Mark Phillips, apparently won't be invited back to talk again. Why? No hard evidence to support their bizarre claims about their alleged involvement with Operation Monarch.

Granted, author Craig Lockwood, in his book *Other Altars: Roots and Realities of Cultic and Satanic Ritual Abuse and Multiple Personality Disorder,* initially repeats O'Brian's words that her daughter was diagnosed as dissociatively disordered and can only be treated by Dr. Bennett Braun. But to his credit, Lockwood—a professional journalist—then scrutinizes Cathy O'Brian and finds that Dr. Braun "dismisses the idea that only he can treat her daughter."

Lockwood cites other inconsistencies with O'Brian's story.

Still, O'Brian insists that the CIA

"mind-controlled" her into a "courier" for top politicians. They took advantage of her, she says. And she has her believers. In the 1970s, a book called *The Control of Candy Jones* sounded similar themes, albeit with Candy Jones as its subject, and ended up a conspiracy-crowd favorite; check it out at the public library, then compare it to O'Brian's tale.

David Tulanian
Victorville, Calif.

Evan Harrington writes that the recovered-memory debate constitutes "one of the most contentious issues in the field of psychology today."

No quibble here. Many clinical psychologists line up on one side; science-based psychologists on the other.

Harrington falters, however, when he indicates that both sides in the repressed-memory war can offer equally persuasive *evidence* in support of their positions.

This argument overlooks the smoking gun in the dispute. Those who truly believe in repressed memories stoutly defend the notion that satanic ritual abuse exists on a broad scale—an idea rendered ridiculous by impartial inquiry. After years spent investigating satanic ritual abuse reports, the FBI and other law enforcement agencies have been unable to verify a single incident. As Kenneth Lanning, the FBI investigator, concluded:

> There is little or no evidence for allegations that deal with large-scale baby breeding, human sacrifice, and organized satanic conspiracies. *Now it is up to mental health professionals, not law enforcement, to explain why victims are alleging things that do not seem to have happened.*

The lack of evidence of satanic ritual horrors deals a damaging blow to the repressed-memory theory, since that theory is the basis for all satanic abuse stories.

Or, to state the case another way: If all cases of satanic abuse are false, then all repressed memories of such abuse are false as well.

Robert V. McKelvey
Hudson, Fla.

Harrington quite rightly takes issue with the term "recovered memory therapy," now widely used as a collective for a variety of suggestive manipulations which aim to retrieve supposedly "repressed" or "dissociated" memories. As a therapy, it has all the hallmarks of an ideology generating beliefs rather than recovering long-lost memories. Harrington unfortunately describes the controversy as a debate over "recovered" and "false" memories, thus introducing a set of false opposites and leaving us with the suggestion that the truth could indeed lie "somewhere in between." Well, does it?

Harrington's article dealt only with "recovered memories" so bizarre that skeptics may easily dismiss the problem. These form only a minor subset of the total that result in false accusations. The vast bulk of pseudomemories generated in people who initially had not a single memory of having been sexually abused sound much less absurd. These are the more dangerous because law enforcement personnel, juries, and judges will arrest, find guilty, and convict innocent defendants on the basis of accusations coming from false memories. People who have suffered repeated sexual abuse, but were afraid to bring accusations forward, of course always remembered that abuse, and may well have spoken to others about it or have others who can corroborate.

Meanwhile, the credit must go to skeptics such as Richard Ofshe and CSICOP Fellow Elizabeth Loftus for being among the first to bring the disaster of sexual-abuse hysteria to the public in their excellent books on the subject. The sad part is that large numbers of therapists still subscribe to theories of "traumatic forgetting" and "delayed remembering," ideas for which there never has been a shred of good scientific evidence.

Adriaan J. W. Mak
London, Ontario, Canada

Evan Harrington will reply in our next issue.—Ed.

Traditional Chinese Medicine

It was with a great deal of pleasure that I received the September/October 1996 SKEPTICAL INQUIRER. I particularly enjoyed the article on traditional medicine and pseudoscience in China. Having served as a visiting professor of American literature at a university located in one of the poorest areas of China, I came to understand why the majority of the Chinese use such folk remedies—they simply are ignorant of or can't afford Western medicine.

Those who can pay for Western health care run an added risk. The level of hygiene exhibited in hospitals and clinics is so low that any treatment is accompanied by the added risk of complications due to infection or contagious disease. I toured the local hospital in Quinzhau and was greeted by doctors with dirty fingernails wearing unwashed smocks. A young man teaching at the university was hospitalized for an appendectomy—a standard procedure in any American hospital—and almost died because of the use of poorly sterilized instruments. The traditional healing ward of the same hospital was fully of the aroma of herbs and roots. Though the floors were just as gritty and the windows and walls as unwashed as the other, the atmosphere was a little better. However, I did see acupuncture take place there with needles that were merely dipped in alcohol between patients, as well as other causes for alarm, but none so gross as in the Western ward.

I think that those New Agers who advocate the use of non-Western healing techniques should visit rural China to understand why people will line up for someone to pass hands over their bodies in the hopes of correcting their "Qi"; or why they ingest powdered bone, roots, and herbs to cure everything from liver complaints to cancer. The other option could be downright deadly. New Agers would then appreciate the fact that Western medicine, coupled with proper hygienic techniques, is the only real weapon we have against major health problems.

Jesse Glass
Fukuoka Jo Gakuin College
Fukuoka-ken, Japan

Sampson and Beyerstein are to be commended for their pair of reports on Traditional Chinese Medicine and pseudoscience in China (July/August and September/October 1996). However, one statement begs for a response from

Western medicine: "We came away with the strong feeling that the TCM community, with a few exceptions, does not really understand the power of the placebo effect . . . . Can Sampson and Beyerstein or anyone else in the medical community claim to really understand the power of the placebo effect, that is, how it works from a reductionist-biological point or view? Is this (the placebo effect) just western terminology for "magic" or "magical thinking"? Perhaps all TCM does is provide a time-tested way to enhance the placebo effect. If that is true, then maybe Western medicine can learn more from TCM than the scientific efficacy of a few more herbs.

Horace Crater
La Vergne, Tenn.

Sampson and Beyerstein's article on pseudoscience in China touched upon the concept of "Qi," a force or energy believed by some to flow in the body and which might be manipulated to benefit health. There have been several studies suggesting that pseudoscientific and religious beliefs can actually contribute to the longevity of people, even if these beliefs are erroneous. For example, Dr. Stephen P. Jewett (a New York psychiatrist) once discovered that all the very long-lived people in his study could be described as religious in the broad sense (although none exhibited extreme orthodoxy). How can we skeptics best balance our desire to obliterate "irrational" thinking while at the same time maintaining the possible health benefits of such thinking? Is there some way skeptics can gain the advantages of life-sustaining thought processes and beliefs that we know to be illogical and unscientific?

Clifford A. Pickover
Yorktown Heights, N.Y.

I enjoyed your series on traditional medicine and pseudoscience in China. I would like to suggest a possible direction for further articles.

I recently read a very good general history of China, *A History of Chinese Civilization* by Jacques Gernet, published by Cambridge. I learned that China is home to at least two cultural strands that have persisted for two thousand years: the "classical" strand, which we in the West know as "Confucianism," and Taoism, which Gernet refers to as "the study of yin and yang." An interesting fact that Gernet brings out is that Confucian writers have in many eras been rationalist and critical. They have often considered their tradition to be different from the Taoist tradition and have generally considered Taoists to be mystical and obscurantist.

Perhaps your magazine could persuade a Chinese scholar to put together a critique of Chinese Traditional Medicine or the study of Qi, from the point of view of the classical Chinese Confucian tradition. This would have the advantage of critiquing antirational meaninglessness while avoiding a wholesale criticism of Chinese culture.

Bill Fishman
Los Angeles, Calif.

Wallace Sampson and Barry Beyerstein reply:

Jesse Glass' experience in rural China adds a dimension to the long, hard pull facing the new China's pull-up from its post–World War II regression. We noted the poorer conditions under which Chinese medicine is practiced, in contrast to the gleaming, modern commercial developments. We understood the difficulties facing Chinese scientists and their devotion to their work under difficult conditions.

We have a reasonable understanding of placebos, which are not magic. Acupuncture is a very good placebo, with a number of related and intertwined characteristics: counterirritation; attention diversion; endorphin release into the central nervous system; pleasant, relaxing conditions (decreased anxiety); suggestion, through therapist's conviction, patient's suggestibility, and mutual consensus on its working and on an agreed-upon result; social consensus backing that up; political approval (especially important in China, but also important for American medical "contras"); ritual (an important generator of belief)—all propelled by classical conditioning and reinforcement. But note also that placebos alter one's perceptions of sensory input more than they can alter disease, upon which they have little effect.

Clifford Pickover asks about the effects of religious beliefs on longevity. We await a study on confirmed skeptics as well.

To Bill Fishman, we, too, would welcome reading about different concepts of Qi, but we do not see where in our article there is a wholesale criticism of Chinese culture. We hope readers recognized the irrationality of aspects of TCM and appreciate the problems facing Chinese scientists and physicians in dealing with it.

Fiction and Fantasy

I was under the impression that fiction was—well, fictional. I agree with Jane Haddam that it is worrisome if the "highbrow" journals she cited don't "know what is dangerous about rampant acceptance of the paranormal as fact" (Forum, September/October 1996). However, all the examples she mentions are about works of fiction. I read literary fiction, science fiction, mysteries (including Haddam's), and fantasy. However, I do not make the mistake of thinking Demarkian and his Philadelphia (Haddam) are any more real than Norma and her Sears (Hoffman), or that Emma and her Hartfield (Austen) are any more real than Broadhead and his galaxy (Pohl). Crime novels, however rational their plots or authors, are no more "fact," no more real, than any other works of fiction. Literary "realism" is no more real than literary "fantasy." All fiction, all art, is the creation of the human imagination—part, I would have thought, of the world of fact (neurobiology) itself.

When we cannot distinguish between fact and fiction, science and the paranormal, we *are* in trouble. I do not believe the solution is to demand that fiction, that art, be limited to realism, but we do need to be sure that we, as audience, are able to distinguish fact from fiction and do not read fiction as fact. Let's not wax indignant or fearful over literary devices popular in current literary culture, but turn our energies toward demanding all are taught the ability to distinguish between science and pseudoscience, fact and fiction, evidence and anecdote (see Wayne Anderson's article following Haddam's). In the meantime, read and enjoy fiction *as* fiction.

Mickie Grover
Yorktown Heights, N.Y.

Witches at the supermarket? Clairvoyant moms in suburbia? Jane Haddam's disappointment in discovering such themes in Alice Hoffman's novels sounds a familiar note. America has a long intellectual tradition of revering "realism" and disapproving of imaginative flights of fancy.

My college-educated, ninety-year-old grandmother saw my two-year-old son singing along with a Winnie-the-Pooh video, and said, "What a shame they don't make children's programs about real life." If all little Colin could see were useful images of policemen and tractors, I'm pretty sure he'd create his own "Hundred Acre Wood" in his mind. Imaginary creations come naturally to human beings—thank the neural network of our evolutionarily adapted brains.

I write fantasy novels, featuring wizards, fairies, immortal shamans, trips to the Otherworld, and other impossibilities. As an author dealing with such material, I've faced accusations by fundamentalist Christians that I'm trying to sway their children to Satanism. Now must I deal with fellow skeptics who consider my work an introductory drug toward full-fledged addiction to a paranormal worldview? We've lost sight of something here: the definition of fiction.

Fantasy is fiction taken to an extreme, but all fiction reflects an imaginary version of the world, as envisioned by an individual author. Realistic fiction is currently approved by academia as being more seriously concerned with humanity's problems; yet many readers and writers enjoy escaping into other worlds, or transformed versions of our everyday world. The distinction between fantasy-fiction and reality enables us to have imaginary adventures—while never believing for a minute that paranormal abilities exist in the real world. Give readers some credit! Common sense and level-headedness abound in America, though you can't tell that from talk shows.

Enjoyment of fantasy is not the enemy of rationality. As a skeptic, a secular humanist, and a scientifically literate member of the intellectual elite, I refuse to give up my right to "make-believe." Haddam's review of Hoffman's work gives me far more interest in reading Hoffman's novels than I had before. They sound like fun!

Catherine Cooke Montrose
Denver, Colo.

The writer is author of The Wendigo Border, The Winged Assassin *trilogy, and the* Mask of the Wizard *trilogy.*

Is TV Scientific Evidence?

Wayne Anderson's observations (Forum, September/October 1996) concerning his students' overreliance on television entertainment programs for evidence of a purported U.S. government coverup of UFOs were interesting, but I do not consider them astonishing or even unusual. As a college graduate myself, I can suggest a reasonable explanation for this phenomenon. Many college students, indeed students of all sorts, are lazy and consider themselves overworked. They, therefore, quite naturally do the minimal amount of work necessary to satisfy any written assignment.

Mr. Anderson's students were asked to explain whether they felt the government was engaging in a UFO coverup and to state their evidence for this belief. Faced with a prospect of researching the topic and, heaven forbid, actually *reading* several sources pro and con, they quite understandably took the easy way out and merely cited material and sources with which they were already familiar. Thus it makes sense that many of the students were unable to cite any other evidence except television on this scientific topic, because they never bothered to seek any other evidence. If the assignment had required a bibliography of multiple books and articles I think the students' responses would have been more scientific. As it was, apparently no such research was required and the students decided not to do any more work than was necessary for their grade. Sadly, for many students, the grade and the credit they receive toward graduation are more important than actually learning any of the material presented. This may provide evidence of our commitment to education and learning, which is disturbing enough, but I do not think it serves as evidence for furthering the well-deserved indictment of television's portrayal science and the paranormal.

G. Scott Robertson
Westminster, Calif.

Operational Definitions

John White (September/October 1996) claims that science is based on operational definitions. While some scientists and philosophers of science hold this view, not all of them do. Also, to define "length" in terms of the successive placement of a meter stick near an object begs a crucial question: If one did not already know something about length, then how would one know that one was measuring it? Also, if one did not know anything about length, how would one construct a meter stick? While scientists want to agree on how to measure length, this is very different from defining "length."

As for Mr. White's claim that the social sciences would do well to adopt operational definitions, I hope that social scientists never claim that intelligence is what intelligence tests measure. The social sciences may never achieve the numerical precision of physics, but it is more important that they specify the important attributes of their objects of study, however inaccurately measured, than to limit themselves to what can easily be quantified.

Colin Day
Columbia, S.C.

What's Gender Got to Do with It?

As a nearly-fifty female skeptic, I kept wondering why on earth Wendy Grossman (September/October 1996) kept disparagingly referring to the over-fifty males dominating the panels at the twentieth-anniversary skeptics' conference.

Perhaps she was making a point about the generation gap. Well, I too participated in the generation that decided "no authority could be trusted." And that's precisely why I'm a skeptic: I don't trust the antiscientific, antirational "authorities" or their unthinking, fad-following believers.

Perhaps she was making a point about gender and rational thought. If that's the case, then I reject her imputation wholeheartedly. The hallmark of scientific thinking is that it transcends narrow-minded categories like gender. I've never cared whether it was a man or a woman who spoke the truth—and neither should anyone else.

Gloria Leitner
Boulder, Colo.

GUIDE FOR AUTHORS

The SKEPTICAL INQUIRER critically examines claims of paranormal, fringe-science, and pseudoscientific phenomena from a responsible, scientific point of view and provides a forum for informed discussion of all relevant issues. Our subtitle is "The Magazine for Science and Reason." We encourage science and scientific inquiry, critical thinking, and the use of reason and the methods of science in examining important issues. The readership includes scholars and researchers in many fields and lay readers of diverse backgrounds. Write clearly, interestingly, and simply. Avoid unnecessary technical terms. Maintain a factual, professional, and restrained tone. All submissions are judged on the basis of interest, clarity, significance, relevance, authority, and topicality.

Direct critiques toward ideas and issues, not individuals. Be prepared to provide documentation of all factual assertions. A useful set of guidelines for those who seek to evaluate paranormal claims, titled "Proper Criticism" and written by Professor Ray Hyman, is available from the Editor. Among the guidelines: clarify your objectives, let the facts speak for themselves, be precise and careful with language, and avoid loaded words and sensationalism. State others' positions in a fair, objective, and nonemotional manner.

CATEGORIES OF CONTRIBUTIONS

Categories of contributions include: Articles, Book Reviews, News and Comment, Forum, Follow-Up, and Letters to the Editor.

Articles: Articles may be evaluative, investigative, or explanatory. They may examine specific claims or broader questions. Well-focused discussions on scientific, educational, or social issues of wide common interest are welcome. We especially seek articles that provide new information or bring fresh perspective to familiar subjects. Articles that help people find natural explanations of unusual personal experiences are useful. So are articles that portray the vigor and excitement of a particular scientific topic and help readers distinguish between scientific and pseudoscientific approaches. Well-balanced articles that report on and evaluate controversial scientific claims within science itself are also needed.

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Space is at a premium; there are always many accepted articles awaiting publication, and many submitted articles cannot be published. Articles are typically 2,000 to 3,500 words (about 8 to 12 double-spaced typewritten pages). We cannot publish treatises. Articles should be organized around one central point or theme. Be succinct. Remember, Watson and Crick's paper reporting the discovery of the structure of DNA took just over one page in *Nature*.

Articles should have a title page. Begin with a succinct, inviting title followed by a concise, 20- to 30-word statement of the article's main point or theme. This "abstract" will be published in display type on the first page of the printed article and used as a summary on the Contents page. The title page should also give the name of the author(s), full addresses, and the lead author's office and home telephone numbers, fax number, and e-mail address. At the end of the manuscript, include a suggested author note of one to three sentences that gives relevant affiliations and credentials and an address for correspondence. If you do not want your address included in the author note, please say so. The manuscript should be accompanied by a brief cover letter stating that the article has not been submitted elsewhere and providing any other essential background for the Editor.

Book Reviews: Most book reviews are about 600 to 1,200 words. Both solicited and unsolicited reviews are used. Include publication data at the top of the review in this order: Title. Author. Publisher, city, year. ISBN. Number of pages. Hardcover or paperback (or both), price. Include a suggested author note. If possible, include the cover of the book for illustration.

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